

# ARCHAEOLOGY



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Autumn 1952

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# THE PALACE OF KING NESTOR

By Carl W. Blegen

*Professor of Classical Archaeology, University of Cincinnati*

**S**YSTEMATIC EXCAVATION OF THE MYCENAEAN palace at Epano Englianos in Western Messenia was begun in 1952 in an initial campaign continuing from May 28 to July 19. The palace occupies the southwestern part of a flat-topped hill which rises just to the west of the modern highroad, about half way between the villages of Chora and Koryphasion, and which commands a magnificent prospect on all sides, looking down on Navarino Bay, some four miles to the south, and the Ionian Sea almost equidistant to the southwest. It is an admirably chosen, dominating site.

The first season's work was devoted largely to the clearing of a broad strip through the central area of the building. Here was uncovered a spacious meg-

aron of the typical Mycenaean or mainland plan. It consists of a great hall entered through an anteroom from a portico (FIGURE 1).

The portico, like the one at Tiryns, had a façade with two columns facing southeastward on a court (FIGURE 2). The latter has not yet been excavated, but it seems to have been very narrow; there was perhaps a larger court to the southwest. The columns were probably of wood; the heavy circular stone bases that supported them are still in place. The floor was surfaced with a pavement of plaster, which was several times renewed until it rose some 15 centimeters or more above the original level and left the columns standing in a correspondingly deep hole. To the right

Fig. 1. Megaron from southeast, showing Portico, Vestibule, and Great Hall with hearth.





Fig. 2. Portico of Megaron from east, showing column bases, place for seat, and door to Vestibule.

of which has been considerably damaged by the fire that destroyed the building; traces indicate, however, that the whole area was marked off into checkered squares, each with painted decoration.

The great hall (FIGURE 4) is of imposing dimensions, nearly 13 meters long and more than 11 meters wide, about the same size as the megaron at Mycenae. Four stone bases, not spaced with perfect symmetry, provided support for columns to bear the

of the door leading into the vestibule is a small slightly raised platform, also made of plaster, which may have been the place for a seat or throne. The rear and lateral walls of the portico had a dado of carefully cut large stone blocks. On each side of the doorway is an anta-like projection aligned with the column of the façade. How far the lateral walls extended has not yet been determined. The doorway to the anteroom, 3.56 meters wide, has a threshold made of three large stone blocks; no pivot-holes have been observed, and it is likely that the opening, in the final period at least, was closed only by hangings. The door jambs were made of wood set into slots in the recessed ends of the walls to right and left.

THE VESTIBULE is approximately 11.40 meters wide and 4.60 meters deep. Its walls, still standing to a height of 1 meter or more, retain much of their finished coat of plaster, which bore frescoes in a variety of colors. Many fragments were collected and further cleaning and study may reveal some of the subjects of the paintings. One piece (FIGURE 3) seems to show delicately decorated (embroidered or woven) drapery, and human figures were probably represented in some of the scenes. The doorway into the great hall, in plan and dimensions, is like the doorway from the portico. Immediately to the right of the opening is a low platform with raised edge, presumably the place for another throne or seat. The vestibule may have had a door communicating with domestic apartments to the southwest; exploration in this direction has not been completed. The floor was made of plaster the surface

weight of the ceiling and roof. The cement-like plaster of the floor, which was many times relaid against the wooden columns while they were still standing, has given us impressions of the lower extremities of the shafts (FIGURE 5), showing that they were neatly fluted in a manner anticipating Doric channeling. In the middle of the room is a well preserved monumental hearth, 4.02 meters in diameter, made of hard plaster. It rises some 20 centimeters from the floor

Fig. 3. Fragment of fresco, showing drapery decorated with woven or embroidered pattern.

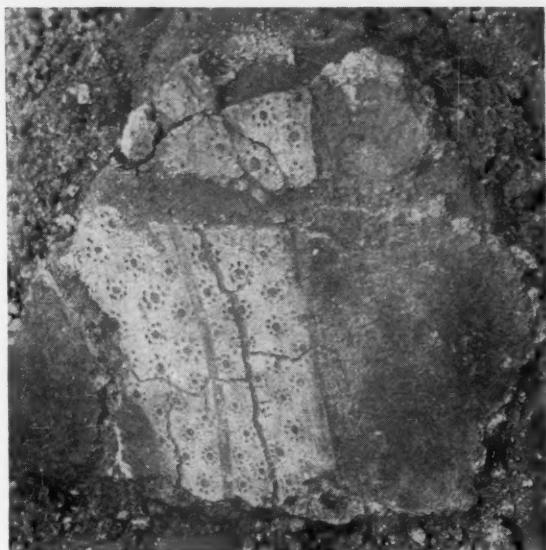




Fig. 4. Great Hall of Megaron from north, showing hearth, column bases, and table of offerings.

with a two-stepped molded edge, and has a broad flat rim on top, encircling a depressed central area, 3 meters in diameter, where the fire was evidently kept

burning. The vertical face and top of the lower step and the wide rim about the fire place were decorated with painted designs, respectively a flame pattern in

*This building was discovered through a brief exploration in 1939 by a joint Greek-American expedition, which was organized by Dr. K. Kourouniotis and C. W. Blegen with the purpose of carrying out a broad archaeological survey of preclassical remains in Western Messenia (AMERICAN JOURNAL OF ARCHAEOLOGY 43 [1939] 557-576). Following the death of Dr. Kourouniotis in 1945, Spyridon Marinatos, Professor of Prehistoric Archaeology in the University of Athens, was appointed to represent the Greek Archaeological Service, while the undersigned continued to represent the University of Cincinnati. In the season just concluded Professor Marinatos assumed responsibility for the investigation of a cemetery of Mycenaean chamber tombs, which had long been known to exist in the upper outskirts of Chora, while I had charge of the*

*work at the palace. This undertaking was made possible through the financial support generously given by Professor and Mrs. W. T. Semple in the name of the University of Cincinnati. We are also greatly indebted for much practical assistance to the American School of Classical Studies at Athens, especially to its Director, John L. Caskey, and to Dr. Homer A. Thompson, Miss Alison Frantz, and Miss Lucy Talcott of the Agora Excavations. My colleagues, who made the work easy and pleasant for me, were Professors George E. Mylonas of Washington University, St. Louis, and Eugene Vanderpool of the American School, as well as Mr. D. Theocharis of the Greek Archaeological Service. The expedition found comfortable lodgings in the village of Chora, the residents of which welcomed us with friendly courtesy and cordial hospitality.—C. W. B.*

black edged with red (FIGURE 6), triangles, probably also in black and red, and large running spirals outlined in black, filled in yellow, with white central eyes, and angle ornaments in red between spirals. Two earlier coats of plaster, visible in a small break, seem to have borne similar decoration.

Against the lateral wall, to the right of the hearth, is a rectangular sinking in the floor, bordered by a raised edge; this is obviously the place for the royal throne (FIGURE 7), corresponding exactly with the installation at Tiryns. Beside the throne, at the right hand of the seated ruler, is a small bowl-like hollow in the floor from which a shallow grooved channel runs more than 2 meters along the wall to a second and similar hollow (FIGURE 7). The purpose of this



Fig. 6. Detail of hearth in Great Hall, showing flame pattern on riser of lower stepped molding.

arrangement is not certain; perhaps it was a place where the king could pour libations without rising from his seat.

The floor was laid out in squares, ten crosswise, twelve lengthwise, separated by double incised lines and measuring more than 1 meter on a side. In the rear part of the hall they are neat and orderly, but between the hearth and the doorway a curious irregularity arose when one row of squares was omitted on the northeast side of the room and the transverse lines from the southwest were connected diagonally with the wrong points opposite. Each square was decorated with painted designs, circles, rectangles, wavy lines, arcs, chevrons, etc. The second square directly in front of the throne bears a large octopus.



Fig. 5. North column base in Great Hall, showing impression of fluted lower end of shaft.

The walls of the room still stand, at the rear to a height of about 60 centimeters, but toward the southeast to about a meter or more. There were frescoes on all four sides, but the subjects of the compositions have not yet been ascertained. It is likely that a gallery ran around the four sides of the hall, and there was probably a clerestory over the hearth. No evidence of gable construction was found, and the roof was presumably flat.

A table of offerings, made of plaster, stood beside the northwestern column; it contained two miniature votive kylixes. On the floor in the southeastern quarter were recovered fragments of a plain basin; nearby were remains of a large storage jar, coated both on the inside and the outside with plaster. The burnt debris filling the room—consisting largely of disinte-



Fig. 7. Place for Royal Throne backed against lateral wall of Great Hall of Megaron; basin-like hollows beyond may be for royal libations.

grated crude brick—yielded a large quantity of nondescript potsherds, also many tiny bits of gold, silver and bronze, all damaged by fire, fifteen fragments of inscribed tablets, more or less baked by the fire, and a few other objects. In earth under the place of the throne we uncovered a small hoard of jewelry: four beads of lapis, agate, carnelian, and bronze, an earring and a bead of gold, a bracelet of silver and a silver-plated ring, and some fragments of bronze.

INVESTIGATIONS WERE  
BEGUN in the southwestern quarter of the palace, where several small rooms near the megaron seem to have been

used for domestic purposes. One, containing an enormous number of plain drinking cups of the kylix shape,

Fig. 9. Inscribed tablets as found on floor of Annex.



Fig. 8. Small rooms in southeastern quarter of Palace. At right, with clay bench, is Archives Room where some 600 inscribed tablets were found in 1939; beyond is Annex which yielded more than 300 additional tablets in 1952. Gap to left of middle marks line of wall torn out by seekers of building material.

may be a pantry; a small trench here brought up two or three hundred cups, all badly broken but mendable. Beyond this complex there are larger apartments and a court with a colonnade, not yet fully excavated. The evidence of the plaster floors, as in the megaron, indicates that these columns, too, were fluted.

In the southeastern quarter of the building the Archives Room was once more uncovered along with parts of three adjoining chambers (FIGURE 8). One of the latter, with a clay floor, was evidently an annex communicating with the Archives Room by a door. Scattered about in groups on the floor (FIGURE 9) were more than three hundred further tablets and fragments, inscribed in the Linear B script (see *ARCHAEOLOGY* 1 [1948] 210-220). They were removed with care, wrapped in cotton, and taken to Athens for cleaning and mending. Almost all had been baked hard by the fire that wrecked the palace.

In the northwestern part of the room we found a heap of burned animal bones and beside it more than a dozen miniature kylixes, possibly votives. A huge ribbed pithos had collapsed and its fragments were strewn over the southwestern part of the same chamber (FIGURE 10). The two other rooms mentioned were of different character, with good plaster floors. On the floor in each were some nests of potsherds from which ten small stirrup vases and a large amphoroid krater have been assembled. Their painted decoration is of the latest style that can be assigned to Late Helladic III B, and on this evidence the destructive fire that laid the palace in ruins may be dated within a few years of 1200 B.C. The date of the original construction has not yet been determined, but it is clear that at least two phases of occupation are represented.

THE IMPRESSIVE dimensions, the character of the architectural details, the quality of the frescoes, and the evidence of wealth make it clear that the palace at Englianos was the residence of a powerful king who ranked with the rulers of Mycenae and Tiryns. In the late Bronze Age western Messenia was no backward provincial area, but a metropolitan center, a capital of Mycenaean culture. The discoveries made by my colleague, Professor MARINATOS, in the cemetery above the village of Chora, show that this culture had sturdy roots going back at least to Late Helladic I.

In the light of these new revelations the identification of the palace is obvious, and there can be little ground for dissenting views. In the whole body of



Fig. 10. Fragments of huge ribbed storage jar littering floor in southwestern part of Annex.

Greek tradition the only royal family of adequate standing that is mentioned as ruling in southwestern Peloponnesos is that of the Neleids. Founded by Neleus who came from Thessaly, it had its most famous representative in his son Nestor, who succeeded him and lived through three generations of men. He led a contingent of ninety ships in the expedition against Troy and he was Agamemnon's friend, confidant, and adviser. Surely there can be little doubt that it is Nestor's palace that has been discovered at Englianos, and the long forgotten site of Pylos in the Heroic Age that has at last been brought to light.

Figures 1, 2, 4, 5, 6, 7, and 8 are from photographs by Alison Frantz.



Fig. 1. Distant view of the pointed tumulus of Antiochus on the summit of Nimrud Dagh, across the valley of the Kahta Chai. Taken from the tumulus of Mithridates I, father of Antiochus.

# NIMRUD DAGH:

## *The Tomb of Antiochus I, King of Commagene*

By Theresa Goell

**O**N THE HIGHEST SPUR OF THE ANTI-TAURUS mountains, 7400 feet above sea-level and facing eastward toward the Euphrates river, stands the tumulus tomb of Antiochus I, King of Commagene, who reigned from about 69 to 34 B.C. (FIGURE 1). As far as we know, this is the last sepulchral monument of the long tradition of sumptuous structures built by Greek artists for rulers in Asia Minor, or Anatolia. Its complex design and colossal scale combined to create a project unequaled in the ancient world. Still practically unknown to art historians, it has received the attention mainly of epigraphers, theologians, and astronomers. Filling a lacuna in the history of architecture, sculpture, and religion of the late Hellenistic era, the tomb deserves to take a prominent place among monuments of the Mediterranean world.

The original project as conceived by Antiochus (FIGURE 2) and explained in Greek inscriptions en-

After graduating from Radcliffe College, Theresa Goell completed her architectural studies at the School of Architecture, Cambridge University, while affiliated with Newnham College. For two years she was on the staff of the ASOR-Yale excavations at Gerasa and in Palestine. Returning to this country, she studied archaeology and the history of art at New York University's Institute of Fine Arts. Since 1946 she has been assistant in the field to Professor Hetty Goldman, director of the excavations at Tarsus, in Turkey. Having traveled extensively in the Euphrates valley, Miss Goell is now completing preparations for excavation at Commagene and other sites mentioned in this article.

graved on the backs and bases of the sculptures was to establish on this peak a sacred precinct, to shelter his body in close association with his Graeco-Persian (Parthian) deities, and to do homage to them and to his Macedonian-Achaemenid ancestors. He also wished to

commemorate his birthday, the sixteenth of Aydnaios (January), and his confirmation in his kingdom by the Romans in the month of Loüs (July) of the Macedonian calendar, with ritual observances, feasting, and music.

The plan and accessories of the tomb expressed in concrete terms these purposes of Antiochus. To give them wider observance he decreed that copies of his



Fig. 2. Antiochus I, builder of the tumulus of Nimrud Dagh. A relief portrait of the king, in the West Court. His garb is of contemporary priestly style, local in character. From Hamdy Bey, *Tumulus de Nemroud-Dagh*.

laws pertaining to them should be placed in the villages of his kingdom (FIGURE 3). Copies inscribed on stelai and rock-cut walls have been found at Eski Kähta, Samsat (ancient Samosata), Adiyaman, Gerger, Kilafik Huyuk, and Selik—villages in the region that once was Commagene (FIGURE 4). Today it is incorporated in the Vilayet of Malatya, a province in the eastern part of the Republic of Turkey.

Fertile Commagene, as Strabo described it (XII,2,1;

XVI,2,3), was small in extent but rich in natural resources. A bread-basket of the ancient world, it was coveted by the Romans for its wealth and because of its strategic position as a buffer against the Parthians to the east. Commagene was the hub of many roads and her geographic position made her eminently susceptible to foreign influences and cultures through her long existence as an inhabited area.

Geographically, tiny Commagene enjoyed a great variety of physical conditions. To the north loomed the Anti-Taurus mountains, with the Black Sea beyond. The Euphrates at the east was navigable to the north as far as the gorge in the mountain barrier, while to the southeast it was navigable to the Persian Gulf. Water and land routes kept Commagene in direct contact with Mesopotamia, Persia, and India. Syria stretched to the south. To the west, the Ghioaur Pass from Sincirli (today Fevzi Pasha) crossed the Amanus mountain wall to Cilicia and the Mediterranean coast lands. Her neighbor to the northwest was Cappadocia. Samosata, the capital city, situated on the right bank of the Euphrates, was important as one of the main crossings of the river, as it still is today. Its main feature is a huge stratified mound accentuated by remnants of a mediaeval castle.

THE DETAILS OF the history of Commagene are still obscure and will be unraveled only by concentrated exploration. Tentatively, it is believed that Commagene was set up as a separate kingdom about 80 B.C. by Mithridates I, father of Antiochus I, when he broke away from northern Syria during the civil wars between the last of the Seleucids, Antiochus Grypus, and his brother. The Commagenian dynasty lasted until 72 or 79 A.D., when the region was reduced to a Roman province under Vespasian.

Although Antiochus I claimed descent from both Achaemenids and Macedonians, nothing in ancient literature confirms this. He styled himself a Hellenophile and Romanophile, thus suggesting that he did not belong to either people through birth but was an indigenous prince of a local tribe. His tomb emanates the spirit of a local overlord who, according to the inscriptions on Nimrud Dagh, observed the most cultivated artistic and theological practices of his day, namely, the Parthian-Graeco-Roman.

The tomb was partially explored by HUMANN and PUCHSTEIN, 1882-83, who reported their results in *Reisen in Kleinasien und Nordsyrien* (Berlin 1890). O. HAMDY BEY and OSGAN EFFENDI also made investigations in 1883, publishing the results in *Le*

*Tumulus de Nemroud-Dagh* (Constantinople 1883). HUMANN and PUCHSTEIN ascribed the tomb to Antiochus I, who capitulated to the Romans about 64 B.C. and was confirmed in his throne by Pompey in 62 B.C. HAMDY BEY attributed the monument to Antiochus IV, mentioned by Josephus as the king who sent a "Macedonian Band" to help Titus during the siege of Jerusalem in 70 A.D., and was removed from his throne by Vespasian in 72 or 79 A.D. for suspected intrigue with the Parthians.

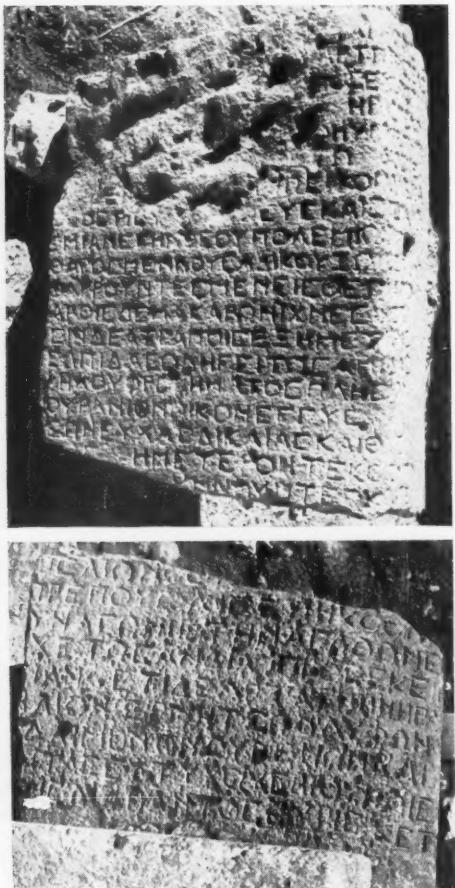


Fig. 3. A copy of the law for observation of the ritual of Antiochus I, found at Samosata, capital of the ancient Commagene. The lower fragment of this stele is a step in the schoolhouse at Samosata.



Fig. 4. Map of the region of Commagene.

Strabo, who described Commagene during the reign of Augustus, does not mention the tomb. Either parts of his *Geography* are lost, or he did not visit this part of Commagene, for he could not have missed this conspicuous monument. It is not mentioned in ancient sources and was unknown to the west until its discovery in 1881 by the road engineer CHARLES SESTER.

In general, scholars have accepted HUMANN and PUCHSTEIN's attribution of the tomb to Antiochus I. The problem was resolved last year by Professor O. NEUGEBAUER on the basis of data provided by the Lion horoscope of Antiochus found in the west court of the tomb (FIGURE 5). The Lion, studded with nineteen stars and crescent moon, and its Greek inscription, met the astronomical conditions of Loüs (July) 62 B.C., the date when Antiochus was confirmed in his kingdom. It is not an astrological memorial of his birth, as previous explorers believed, but a true astronomical calendar, the first Greek one known. (Professor NEUGEBAUER has generously permitted me to announce his unpublished report.) This date is vital for a clarification of Hellenistic culture, as it provides evidence for some of the gaps in Hellenistic chronology. We now have a monument of fixed date around which to group others.

I FIRST LEARNED ABOUT the tomb of Antiochus from Professor KARL LEHMANN in 1939, and was determined to visit it for first-hand study. The first opportunity presented itself in

the summer of 1947 while I was working at Tarsus in Cilicia. In the summer of 1951 I made a second journey to Commagene by the way of Malatya, from the northwest.

In 1947, after several days' travel from Tarsus toward the northeast, we reached Adiyaman the caravan city on the western side of the plateau of the ancient kingdom of Commagene. It was from here that we beheld with keen excitement the pointed tumulus of Antiochus in the brazen July atmosphere, hovering like a mirage over the ramparts of Nimrud Dagh. Artificial mounds punctuating mountains and valleys are familiar landmarks in Turkey—they characterize the entire landscape from the Aegean to the eastern borders. Some are tombs; others the accumulation of ancient habitation levels; while still others were used as watch- and beacon-towers to flash messages from one district to another.

A few miles northeast of Adiyaman we came to the ruinous Hellenistic-Roman city of Perrhe, today called Pirin. Its arched Roman fountain nearly buried in rubble is the gathering place of villagers and the goal of caravans. Fragments of classical and Byzantine architecture are plentiful. A short distance away is a terraced rock-cut Roman necropolis facing Nimrud Dagh. The region vibrates with the life of the ancients. From Perrhe we pushed northeast across the plateau toward our objective, the tumulus of Antiochus, which seemed to go before us.

Fig. 5. Horoscope of Antiochus I from the West Court of the tomb of Nimrud Dagh. Part of a dado relief in the wall around the court made of orthostates adorned with reliefs and inscribed in Greek. From plaster cast illustrated in Humann and Puchstein, *Reisen*.



Fig. 6. Eagle column on the southern side of the tumulus of Mithridates I, founder of the Commagenian dynasty in about 80 B.C. The tumulus situated at Kara Kusch (Black Bird) overlooking the Kahta Chai is in view of the tumulus of Antiochus on top of Nimrud Dagh.

Finally we reached Yeni Kâhta and the valley of the Kâhta Chai (river) which skirts Nimrud Dagh and flows southeast to the Euphrates. The river, silted in many stretches, is a swift mountain torrent which has cut a deep gorge between Nimrud Dagh and its buttressing foothills. Emerging like a ghost among the hills on the west bank of the Chai, a second tumulus rose up before us. Under the constant watch of the tumulus of Antiochus across the valley, it is considered to be the tomb of Mithridates I, his father. The place is called Kara Kusch (Black Bird) by the local in-

habitants after the eagle which surmounts one of the columns surrounding the tumulus (FIGURE 6). Originally there were three groups of Doric columns with rusticated drums. These were surmounted by eagles, lions, bulls, and stelai with portrait reliefs and inscriptions relating to the family of Mithridates.

Several kilometers beyond, another surprise awaited us in this nearly deserted valley that once teemed with life. An ancient bridge restored by Septimius Severus still stands nearly intact over the Cendere Chai, a branch of the Kâhta Chai (FIGURE 7). Built with a



Fig. 7. Bridge of Septimius Severus over the Cendere Chai, a branch of the Kahta Chai. Single span of 112 feet, keystone 56 feet above mean water level. Still used, it stands on the site of an older bridge.

single span of 112 feet, its keystone is fifty-six feet above mean water level. At each end of the flanking parapets of the bridge stood columns inscribed in Latin, erected by four cities of Commagene in honor of Septimius Severus, his wife, and his sons Caracalla and Geta. The column dedicated to Geta is missing—removed, it is said, after his murder. Stelai on the parapets also were inscribed in Latin. The bridge was on the royal road leading from Samosata to nearby Eski Kâhta. A terraced village littered with the shambles of classical and mediaeval fragments, it is dominated by the ruin of a mediaeval castle and looks toward the tumulus at Kara Kusch. Eski Kâhta, whose ancient name is not known, was a royal seat of the Comma-

genian dynasty, for a religious precinct of Antiochus I was located here.

THE PROCESSIONAL WAY to the sanctuary began at Eski Kâhta. One day's climb by foot and animal—vivid with adventure, breath-taking scenery, and the colorful hospitality of the mountaineers who greeted us at a summer retreat near the top—brought us to the awesome spectacle of the ruins of the tomb of Antiochus.

Isolated on its mountain site, the monument had survived nearly intact. Its scattered architectural members, waiting only to be identified and restored to their original setting, lay before us. The architectural and sculptural details, described by HUMANN, PUCHSTEIN, and HAMDY BEY, could be checked, but their descriptions had not prepared us for the forceful impact of the site with its overpowering tumulus (FIGURES 8 and 9). Soaring from the peak, spilling down the slopes of Nimrud Dagh like a melting snow-cap, was a conical mass—the eternal abode of Antiochus—formed of loose, fist-sized, crushed limestone. Gray and desolate, it overlooks the entire countryside of Commagene, which sprawls about the base of Nimrud Dagh. The tumulus, covering several acres, is roughly 150 feet high and bounded at approximately north, west, and east by three terrace courts hewn from

the living rock. Partially cleared by the explorers, they are gradually being buried again in the migrating rubble of the tumulus.

The courts presented scenes of cataclysmic chaos. Projecting from the rubble were the decapitated bodies of the enthroned colossi (originally about twenty-four feet high), representing the Graeco-Persian (Parthian) patron gods of Antiochus, and himself seated among them. Scattered below lay their crowned heads (FIGURES 10 and 11) shaken off by the earthquakes which had convulsed the mountain. Only the Fortuna of the East Court, a comely personification of Fertile Commagene, still held her head aloft. My companions disporting and posing for photographs among the gods

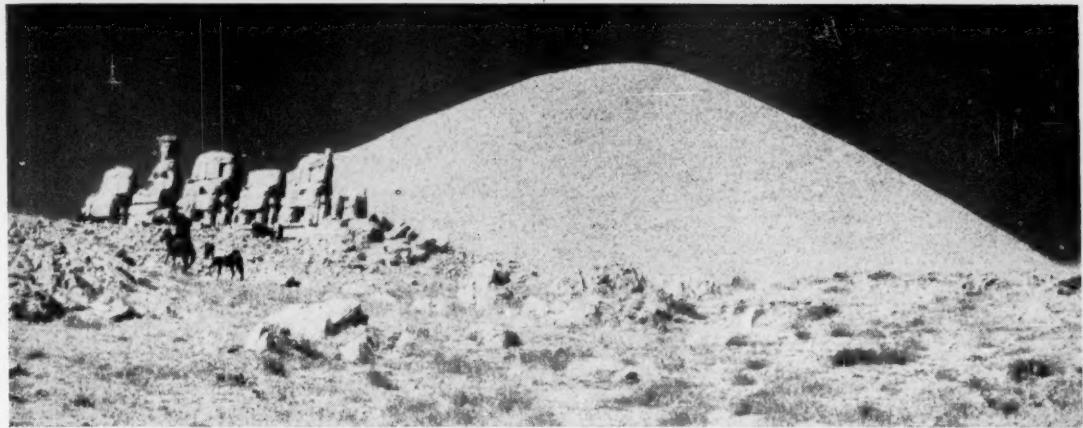


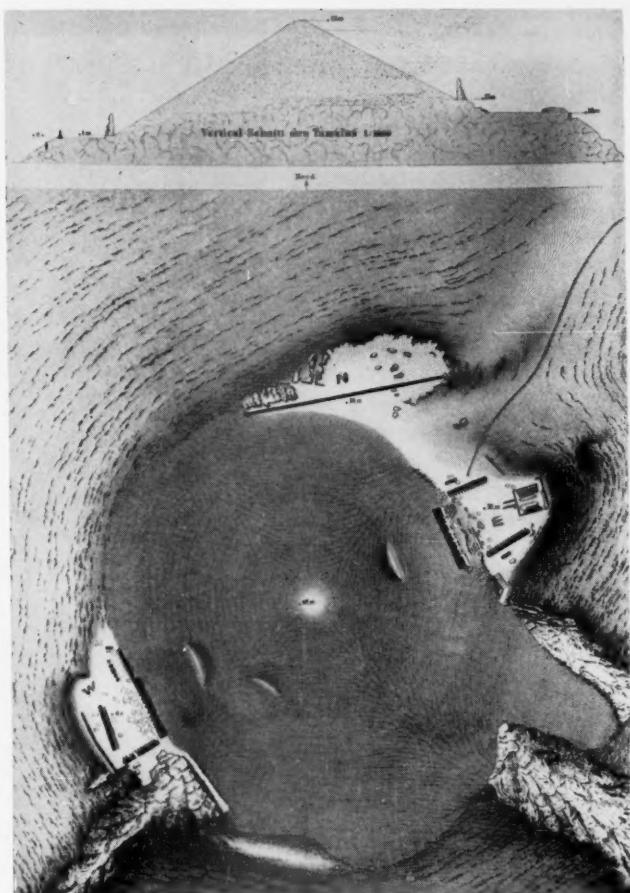
Fig. 8. The view on reaching the summit of Nimrud Dagh—the colossal statues of the East Court and the conical mass, 150 feet high, of the tumulus of Antiochus. The statue of Zeus was about 24 feet high. Only the Fortuna still holds her head aloft. There is a similar group of statues in the West Court. See the plan below.

looked like pygmies.

The tour of inspection of the architectural and sculptural features confirmed what I had previously suspected—that fundamentally the monument was rooted in Anatolian-Hittite tradition. That such tradition was still alive, concomitant with widespread influence of Hellenic culture and style, we know from the Sandon coins and terra cottas discovered at Tarsus by Professor HETTY GOLDMAN and the Zeus-Dolichenus figures of the late Hellenistic and Roman periods.

The East Court is the most unified and monumental. Overshadowed by the tumulus against which its western side abuts, its north and south sides are flanked by low walls composed of contiguous orthostates standing on continuous plinths. The sides facing the court are adorned with reliefs representing the Persian and Macedonian ancestors of Antiochus, and the king himself holding the right hands of his syncretized deities. All the male figures are in Parthian garb except Heracles-Ares-Artagnes, who is a bearded nude classical type holding a club and wearing a lion's skin (see FIGURE 12). In front of each relief stands a rectangular incense altar.

Fig. 9. Plan and section of the tumulus, showing the East and West Courts, the disposition of the sculptures and the northeast approach. From Humann and Puchstein, *Reisen*.



The backs of the walls away from the court are engraved with long inscriptions referring to the ancestors of Antiochus. A short distance behind each wall stood a parallel wall, now missing, which formed a passage or Processional Way. By analogy with the West Court, a wall must have enclosed the eastern side of the East Court.

A monumental stairway extending the whole width of the Court dominates its west side. At the top of the stairway, which formed a deep platform against the tumulus, stood seven large stone pedestals. The five inner ones carried enthroned colossi representing the patron gods of Antiochus. From left to right sat Apollo-Mithras, the Fortuna of Commagene, Antiochus himself, Zeus-Oromasdes (the largest of them all), and Heracles-Arganes (FIGURE 8). The male figures wear draped "classical" costumes and are crowned with pointed Anatolian headdresses. The Fortuna wears a turban of fruit. Block-like in character, they are reminiscent of the draped seated Branchidae figures guarding the Processional Way at Miletus. In this aspect the Nimrud Dagh colossi may be considered Greek neo-archaic, but actually they were inspired by Anatolian-Hittite tradition with analogies in the colossal statues of Carchemish, Sincirli, and other Hittite sites. Each end pedestal carried a group composed of a guardian lion and eagle.

The sides of the pedestals facing the platform and tumulus are engraved with the laws and prescriptions of Antiochus in Greek. These directed the procedure for the celebration of his cult, his birthday, and confirmation in his kingdom. If the debris on the platform were cleared away a retaining wall with entrance to the tomb-chamber, the chamber itself, and the body of Antiochus with all its accessories might be found. An intact chamber would give us a unique undisturbed royal Hellenistic tomb and would thus add consider-

ably to our knowledge of that rather dark period.

Some distance up the stairway, roughly on its axis, is a masonry block resembling the altars in front of the Temples of Augustus and Jupiter in Pompeii. On the east side of the court, opposite the altar, is a stepped pyramid, said to be a Persian fire-altar. It resembles the stepped pyramid platform carved in relief on the façade of the Tomb of Darius I at Nakshi-Rustam near Persepolis and may likewise have been used as a platform during ceremonials.



Fig. 10. Head of colossal statue of Apollo, with the personification of Commagene in background, in West Court of Nimrud Dagh.

claimed that the tumulus is Persian, reflecting the stepped pyramid of Cyrus the Great at Pasargadae.

But we need not explore far-off Persia for a prototype of the royal tumulus chosen by Antiochus as his eternal resting place. The tumulus was common to Anatolia. That of Alyattes, father of Croesus, at Sardis is well known through the description of Herodotus (I.93), and we have already mentioned that of Mithridates, father of Antiochus. In Asia Minor elaborate tombs made by Greek artists for Anatolian princes and Asiatic satraps were traditional. The artistic vocabulary was Greek; the basic forms Anatolian. The superb example is the Mausoleum of Halicarnassus with a sur-

mounting masonry pyramid, a monumental tumulus.

Since Antiochus did claim descent from the Persians, it would be revealing to find some features of the tomb inspired directly by Achaemenid examples. The "Persian" costumes of Antiochus, his deities and ancestors do not come directly from the draped costumes in the Persepolis reliefs. They were the result of the type passing through a long evolution and representing a local contemporary style worn by the Parthians. Another type with long cloak and trousers narrow at the ankles is of Median origin. The original may be seen worn by Medes in the Persepolis reliefs and on silver statuettes of the Achaemenid period. In other words, the Nimrud Dagh figures are wearing local, contemporary costumes.

The sculpture on Nimrud Dagh, both free-standing and relief, is of the highest importance for an evaluation of cultural influences. The heads of the colossi offer the clearest analogies to classical quality and style. They were probably made by Greek artists. The face of Apollo (FIGURE 10) bears a striking resemblance to the Apollo in the west pediment of the Temple of Zeus at Olympia. The Nimrud Dagh Apollo is early neo-classical in spirit. However, if we compare his eyes with the eyes of the colossal standing figure of Sincirli (now in the Istanbul Archaeological Museum) and other Hittite colossi, it becomes evident that the underlying influence was local. The faces of Heracles and Zeus (FIGURE 11) follow a later tradition based on the type created by Scopas who worked on the Mausoleum of Halicarnassus. This type is perpetuated in the gigantomachy of the Altar of Pergamum. The Nimrud Dagh faces have the same frowning expression with heavily furrowed foreheads, and may well be considered "neo-Baroque."

The Horoscope of Antiochus (FIGURE 5) is con-

sidered evidence of the Hellenistic inspiration of the tomb. However, although the lion seems to be moving in real space, the profile body and frontal head are of Mesopotamian origin. The head with wide-open mouth and the geometric projecting hair are based directly on Hittite models, such as those of Boghaz Köy, Sincirli and Carchemish. Its legs, with wiry-ribbed claws and bulging horizontal ridges above, its schematic belly hairs also have Hittite prototypes. The stars and crescent moon on its body and background are not Greek, but Mesopotamian in origin.



Fig. 11. Head of colossal statue of Zeus, about 6 feet high, in West Court of Nimrud Dagh.

THE ICONOGRAPHY OF the groups showing Antiochus shaking hands with his deities seems at first glance to be classical, and reminiscent of Concordia groups, common on coins (FIGURE 12). But this feature is more properly related to Hittite concepts in which the monarch does not die as an ordinary mortal but becomes a deity. The best known example is the rock-cut relief of Yazili Kaya which shows the monarch under the protecting arm of the god wearing a high pointed headdress. We cannot, therefore, rule out the probability that this idea survived in the reliefs of Antiochus. Since we know that Anatolian-Hittite concepts prevailed into late Hellenistic times, it would not be surprising to find indigenous ancient religious and cultural manifestations, especially in eastern Asia Minor which was remote from the busy mercantile centers of the Hellenized Mediterranean coastlands.

After visiting several Hittite sites I was convinced that the tomb of Antiochus could not be dismissed merely as a megalomaniacal expression of a bombastic king, but that it was relevant to perplexing questions relating to the Hittites: what happened to

Hittite architecture and sculpture after Carchemish and Kara Tepe of Cilicia and to where did it evapo-



Fig. 12. Reliefs in West Court showing Antiochus holding hands with his syncretized deities Zeus-Oromasdes, Apollo-Mithras, Heracles-Artagnes, and part of the Lion Horoscope to right. The prong in the base of each slab held it firmly on the wall shown at the top of this photograph.

rate? Comparisons between the Greek and Hittite monuments of Asia Minor make it evident that Hittite elements were inherited by Greek artists, who created a variety of structures assimilating Anatolian forms to Greek plastic vocabulary. In the illustrious procession of such creations are the Harpy Tomb of Xanthus with sculptured wall reliefs (ca. 500 B.C.), the Herōon of Gjölbaschi with its court and tomb chamber surrounded by wall reliefs (fifth century B.C.), the Lion Tomb of Cnidus (ca. 394 B.C.), and the Mausoleum of Halicarnassus (ca. 350 B.C.) with their superimposed pyramids. Finally, the Altar of Pergamum with its great court surrounded by wall reliefs and its monumental stairway approach brings to mind the East Court of Nimrud Dagh with its stairway and orthostate reliefs surrounding the court.

TO BE PROPERLY understood these highlights of Greek-Anatolian architecture, sculpture, and religion must be evaluated against the background of Anatolian culture with which they had much in common. The earlier Harpy Tomb and the Herōon were not too distant in time from Carchemish and Kara Tepe. They are a bridge from the last of the neo-Hittite structures of the ninth to seventh centuries B.C., to the dynamic altar of Pergamum, and finally to the tomb of

Antiochus I on Nimrud Dagh in the first century B.C.

One of the fascinating problems of the tomb concerns the origin of the artists who planned the architecture and executed the sculpture. The faces of the colossi and some of the reliefs were undoubtedly made by Greek artists from the west coast of Asia Minor or by Anatolians trained in the schools of Greek artists. The style of the sculptures indicates different hands. This problem calls for further investigation and will be determined only when a completely new survey of the monument has been made, a task already begun by the writer.

*I should like to acknowledge my gratitude to the directors of the Department of Antiquity of the Republic of Turkey, the former director Dr. Hamit Kosay, and the present director Dr. Cabit Kinay for the help and permits they issued to allow me to travel in and investigate the region of ancient Commagene. And not less to Bay Bedri Ozbey the Director of Education of Kâhta who acted as such an enthusiastic and interested host and guide. Space does not permit me to mention the countless people, police, officials, residents, horse-leaders and chauffeurs, among others, who facilitated and cleared our way. The apparently simple matter of photography, represented by the illustrations in this article, would have been impossible without all this aid.—T. G.*

# Excavations in THE ATHENIAN AGORA, 1952

By Homer A. Thompson

*Field Director, Agora Excavations*

**I**N THE MONTHS FEBRUARY TO JUNE OF 1952 THE American School of Classical Studies carried out its seventeenth season of excavation in the Agora or civic center of ancient Athens. The results were most satisfactory in many respects. Not only was much learned about the history and design of the square, but numerous fine vases were recovered from early tombs and wells. Several good pieces of sculpture and two inscriptions of great historical interest also came to light. Finally, progress was made in completing the clearance of the ancient square and in the conservation and study of the buildings already known here.

The most startling topographical development of the season has been the discovery of the southern limit of the public square as it was in its earlier period, that is, from the sixth to the second century B.C. (FIGURE 1). In the area to the south of the eleventh century Church of the Holy Apostles three public buildings of the sixth and fifth centuries have been exposed. They lie in an east to west row so as to face north across the early square and to present their backs to a road which from at least the sixth century B.C. until the present day has been the principal east to west thoroughfare at the north foot of the Acropolis. Since the northern and western sides of the early Agora

had already been approximately fixed, it now appears that even by the middle of the fifth century B.C. Athens had a very large square, measuring some 200 meters (about 650 feet) from north to south and probably not much less from east to west, comparable in area with Constitution Square of modern Athens.

**O**F THE NEWLY discovered early buildings one is of uncertain purpose, one contained shops, the third was a fountain house of a type hitherto best known from representations on Athenian vases of the late archaic period (FIGURE 2). In plan, it is a long rectangle, measuring 6.66 by 18.20 meters and is well built of limestone in the style of the late sixth century B.C. From the market square one entered a central lobby which gave access right and left to two areas, each with a slightly depressed marble-paved floor and adequate provision for drainage. In the walls surrounding these paved areas are to be restored the lion-head water spouts at which Athenian girls are represented filling their water

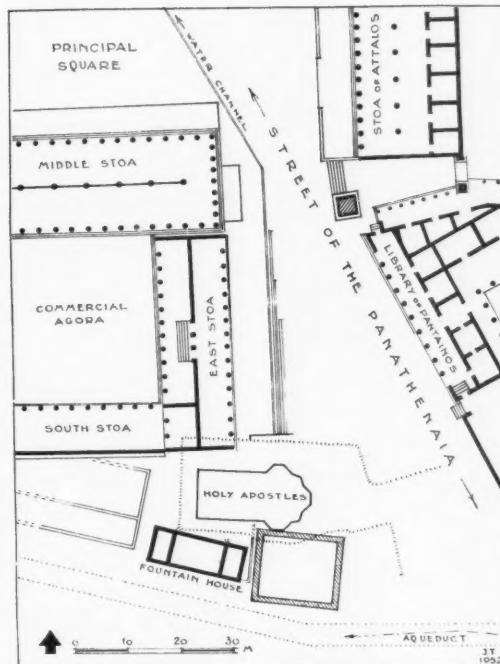


Fig. 1. Plan of southeast corner of the Agora, showing the Southeast Fountain House and other early buildings in the extreme corner of the square; further to the north, various colonnades enclosing the Commercial Agora.



Fig. 2. View of the Southeast Fountain House and Church of the Holy Apostles at the close of the last excavation season, July 1952. This view from the southeast.

were interrupted by deep round basins from which water could be bailed for various purposes. One such basin lies at the entrance to the Sanctuary of the Twelve Gods which, as is known from the ancient authors and from excavation, was surrounded by a grove of trees (FIGURE 3). Here then is an illustration of the practice recommended by Plato in the *Laws* and the *Kritias*, that the overflow from the public fountains should be led off in channels to water the groves of the gods.

ANOTHER EARLY structure, an *eschara* or ground altar, came to light this season near the northwest corner of the square, close by the Sanctuary of the Twelve Gods. The fireplace, like a primitive domestic hearth, rests on the ground and is surrounded by a simple stone curb. It thus corresponds to an ancient definition of an *eschara* as "a hearth without height, set down on the earth." At a slightly later period the fireplace was bordered with a stone pavement and enclosed by a low wall. This was in all likelihood an *heroon*, the sanctuary of a hero, conceivably that which, according to Herodotus, the Athenians built about 500 B.C. on the recommendation

pitchers in vase paintings. The fountain house would seem to have been fed by a large aqueduct which came from some as yet unknown source in the eastern part of the city and ran beneath the road which bordered the south side of the square.

This water main continued westward beyond the newly discovered fountain house to supply a second large fountain house, likewise of the late archaic period, which was discovered in 1934 at the southwest corner of the square. One or the other of these buildings is undoubtedly that referred to by Pausanias, writing about 150 A.D., as the *Enneakrounos* (Nine-Spouter), the most famous fountain house in the ancient city. The problem as to which building bore this distinguished name can be settled only by more thorough exploration and study of both. In the meantime they will be referred to as the Southeast and Southwest Fountain Houses respectively.

More important than the names of the buildings is the fact now clearly established that already by about 500 B.C. the square was provided with two large fountain houses conveniently situated on high ground at its south side. The overflow from the fountains was carried northward through the square in open stone channels, many lengths of which have come to light along the principal thoroughfares. At intervals the channels

FIG. 3. The approach to the Altar of the Twelve Gods (Altar of Pity) from the west. The round stone water basin in the foreground was fed from the overflow of the Southwest Fountain and was probably intended for watering the grove known to have stood around this altar.



Fig. 4. Amphora of the seventh century B.C., transitional between the orientalizing and the black-figure styles, showing bull protome and some floral ornament.



Photographs by Alison Frantz

ond century B.C. by the bold device of dividing the huge old square into a public plaza toward the north and a lesser area, clearly a provision market or commercial area, toward the south. The initial move in this transformation was the construction, about 160 B.C., of the Middle Stoa, a very long roofed market hall with columns on all four sides, divided longitudinally by a median wall in such a way as to face both north and south.

In the later part of the second century B.C., as the means were found, both the great square toward the north and the lesser square toward the south were further embellished. About 150 B.C. the east side of the great square was closed by the magnificent marble facade of the Stoa of Attalos. A few years later on the west side of the great square arose the Metroon, the

of the Delphic oracle in honor of the Aeginetan hero Aiakos.

More significant than the discovery of any single monument has been the growth in our knowledge of the general development of the Agora as the heart of the ancient city state; in this respect the work of the past season has been very fruitful.

It is now clear that in the early days the roomy market square had served as a gathering place for most of the communal activities in the life of the city: politics, commerce, religious and dramatic festivals, social intercourse. In the course of time special provision was made for the various departments of public life. Already by about 500 B.C. the dramatic festivals were transferred from the "orchestra" in the Agora to the more sheltered south slope of the Acropolis and at about the same time the meetings of the political assembly were provided with an auditorium on the Pnyx where they were less subject to disturbance. In the fifth and fourth centuries permanent buildings were erected around the square for the meetings of the law courts.

ONE OF THE last functions of the Agora to be segregated was the practical business of buying and selling provisions. An abortive attempt to improve the market proper was made in the early part of the third century B.C. by the start of construction on a square colonnaded building, the unfinished foundations of which came to light some years ago beneath the Stoa of Attalos. The problem was finally solved in the sec-



Fig. 5. Protoattic oinochoe, lion protome. The animal's mane and tongue were painted a brilliant red.

new archives building, which likewise presented a long marble porch to the square. The excavations of 1952 have shown that also at this time the east and then the south sides of the lesser square were closed by colonnades, less pretentious structures of limestone in keeping with the more prosaic function of the commercial Agora.

By this division of their old square the Athenians eventually realized the ideal arrangement which had been outlined two centuries earlier by Aristotle in his *Politics*. The great northern square, equipped for the more seemly departments of public life, answered to Aristotle's "Free Agora" to which "artisans, farmers and such like were to be admitted only if summoned by the magistrates," while the lesser area to the south, well removed from the public buildings and temples, but conveniently situated near the middle of the residential district, will have been Aristotle's "Commercial Agora." With the completion of this great program Athens could boast of a civic center which for

Fig. 6. Amphora of the seventh century B.C.; one of several vases found in wells of this age.



Fig. 7. Statue of Aphrodite, Venus Genitrix type, found near the Southeast Fountain House.

practical convenience, sheer beauty and monumental quality was unsurpassed in the contemporary world.

After the discovery of numerous early graves and tombs beneath the square in 1951 it was natural to expect the appearance of others. The season of 1952 brought to light another small chamber tomb of the Late Helladic or Mycenaean period toward the northeast corner of the square and a second midway between the Metroon and Odeion, two shallow graves of the same period south of the Temple of Ares, and one to the east of the Odeion, a Submycenaean pit grave near the southwest corner of the Temple of Ares and a grave of the late Geometric period to the east of the Odeion. All these burials were of a modest nature, furnished with simple vases, jewelry, and weapons. Their combined evidence, however, considerably enriches our knowledge of the extent and disposition of

Fig. 8. Portrait head of a girl, her hair dressed in the style fashionable in the reign of the emperor Claudius.

the early cemetery beneath the Agora.

SIXTEEN ANCIENT wells were cleared in the course of the season: one of the Late Helladic period, four of the Geometric, five of the seventh century B.C., two of the sixth century B.C., one of the late Roman period, and three of the Byzantine.

The Late Helladic well, which came to light between the Temple of Ares and the Altar of the Twelve Gods, is interesting as the first well of that period yet found beneath the level area of the later Agora.

Of interest also is a group of six wells that had been opened within a small area to the east of the Odeion; they fall into a series extending in date from the early Geometric period (ninth century) into the third quarter of the seventh century B.C.

Two of the seventh century wells yielded particularly valuable groups of pottery, covering as they do the transition from the orientalizing style and outline drawing to the beginnings of the black-figure style with its incision and purple paint. These groups also contain a significant proportion of imported Protocorinthian vases. Outstanding among the individual vases from the two wells is an



amphora with the protome of a bull on opposite sides of the neck (FIGURE 4), and a bold floral pattern on the upper wall; an oinochoe with the head of a lion in a large wall panel (FIGURE 5); and another amphora with two wall panels each occupied by a pair of horse protomes facing and shaking forefeet with one another, one of the most charming drawings known from this period (FIGURE 6).

A STATUE of the Venus Genetrix type, lacking head and right arm, was found incorporated in a late Byzantine wall to the north of the Southeast Fountain House (FIGURE 7). In place of the apple which appears to have been carried by the fifth century prototype, the newly found figure holds a water pitcher in her left hand; on the analogy of similar adaptations of the Venus Genetrix type which have been found in nymphaea elsewhere (e.g. Milletos and Gortyn in Crete) the Agora statue may be presumed to have had some connection with the fountain house as it was embellished in the Roman period.

Likewise near the southeast corner of the main square was found the crisply modeled and well preserved portrait head of a young woman with her hair arranged in the fashion of the

Fig. 9. A portrait in terra cotta, probably representing the philosopher Zeno.



Fig. 10. Marble stele with law against dictatorship (336 B.C.). The relief above the text of the law shows two figures probably symbolizing Demos, the People of Athens, being crowned with a wreath by Democracy. The Athenian state set aside the sum of 20 drachmas for the carving, inscribing and placing of two of these stelai.

the Athenians against the Spartans at Tanagra in 458 B.C. Other fragments have long been known, but the new piece, preserving part of the top of the stele, assists greatly in the reconstruction of its shape and its text.

The other inscription records a law of the *nomothetai* passed in 336 B.C. and directed against any attempt to overthrow the democracy or to set up a dictatorship in Athens (FIGURE 10). "Any man who kills a person attempting such things is to be counted guiltless." In the relief above the text the Demos of the Athenians, very old and very careworn, is being crowned by a female figure, no doubt Democracy. The measure was evidently intended to forestall any plot to establish a pro-Macedonian dictatorship in Athens in the feverish months that followed on Chaironeia. The context in which the inscription was found, deep beneath the Stoa of Attalos, indicates that it must have been thrown down not later than the end of the fourth century B.C., presumably when the Macedonians entered Athens in 322 B.C.

Systematic conservation was extended to the Stoa of Zeus and the Temple of Apollo Patroos (FIGURE 11). The foundations have been outlined and refilled—the remains are easily understood yet safe for the future.



second quarter of the first century after Christ (FIGURE 8). Her right hand found nearby holds a phiale, indicating that she was represented in the act of pouring a libation.

Another striking portrait study in quite a different medium occurs on a terracotta medallion in high relief from the floor of a bowl of the early Roman period (FIGURE 9). On it is modeled the bust of a philosopher in the act of lecturing, right hand in air, the left hand holding a scroll. The type of representation is one common in the third century B.C.; the face has Semitic features and is close to that of Zeno as known from the portraits in Naples inscribed with his name. There can be little doubt that this brilliant miniature does indeed represent Zeno of Cyprus, who founded the Stoic school of philosophy in the Painted Stoa at the north edge of the Agora.

**A**MONG THE inscriptions found in 1952 may be mentioned two of great historical interest. The first is an additional fragment of the memorial erected in honor of the men of Argos who died fighting beside

Fig. 11. The northwest corner of the Agora showing the Stoa of Zeus and the Temple of Apollo Patroos after study and conservation. Beyond is the well known Temple of Hephaistos.

## THE STATUS OF CYPRIOT EPIGRAPHY—

# CYPRIOT WRITING, MINOAN TO BYZANTINE

By T. B. Mitford

*This paper was read at the Second International Congress of Epigraphy in Paris on April 18th, 1952. The author, who is Lecturer in Humanity at the University of St. Andrews, Scotland, has been for seventeen years a student of the epigraphy of Cyprus, and is now preparing the definitive epigraphic corpus of that island. He has visited Cyprus regularly since 1935 except during the war, when he served in the Middle East as a major in a parachute detachment. He tells us that he has now replaced his parachute with a squeeze brush.*

THE INSCRIPTIONS OF CYPRUS ARE OF INTEREST, not for their bulk—for they are easily outnumbered by those of Delos or Delphi—but rather for their diversity. They range in time from 1500 B.C. to the Arab invasions of the seventh century of our era. We must contend with four main languages, of which one is still totally meaningless, in addition to the most archaic of the Greek dialects; and these are couched in four scripts (excluding the cuneiform) of which the Cypriot Syllabary and its Bronze Age ancestor, the Cypro-Minoan Signary, are of a unique importance. In this survey of Cypriot epigraphy, I shall treat period after period chronologically, and report to you the progress of recent years in each.

I shall offer no apology for opening this report with the Cypro-Minoan Signary of the Late Bronze Age, since the problems which concern it are of importance for the history of Greek speech alike in Cyprus and in the Greek homeland. The foundation for the scientific study of this Signary was laid by the late J. F. DANIEL, whose untimely death is a serious loss to Cypriot archaeology. In an article published in the AMERICAN JOURNAL OF ARCHAEOLOGY for the year 1941, DANIEL revised, assembled, and analyzed all the signs then known. In so doing, he listed 185 inscriptions. Of these the longest had eight, thirteen had either three or more, and the great majority but a single

sign, either cut or painted, for the most part upon the handles of vases. In all he recognized 110 separate signs, including numerals; but several of these he very properly segregated as hitherto found only on seals or on imported pottery. But his chronological conclusions, which are of great interest, are based solely upon his excavation of the Bamboula site at Curium. DANIEL found that the whole of his *corpus* fell between the years 1500 and 1150 B.C.; and he claimed that, for the four and a half centuries which precede the re-emergence of the Syllabary in its Classical form, there was not a single written record.

So far as I am aware, these conclusions have as yet neither been confirmed nor disproved by any other excavated site; but I shall be surprised if they survive unmodified for long; for they mean that the script reached Cyprus during the Minoan thalassocracy, before the Mycenaean age began, and that it went out of use in that mass invasion of Achaean Greeks which has generally been ascribed to the middle of the twelfth century. But Minoan objects are strays of extreme rarity in the island; while the Signary did in fact survive the Geometric period, to become the vehicle of the Cypro-Arcadian dialect. DANIEL, I would add, was not aware that there are some few signs on certain bucchero vases in New York which appear to belong rather to early than to late Geometric times.

*The Cypro-Minoan Signary, a system of writing in which each sign represents a syllable, was introduced to Cyprus from Crete. The Cypriot Syllabary, a modification of this prehistoric system, was used in the historic period to write the Greek language. For a discussion of this form of writing and the problems connected with it, readers are referred to "Prehistoric Greek Scripts" by George E. Mylonas in ARCHAEOLOGY 1 (1948) 210-220.—Ed.*

It is clear that we are here groping in little better than total darkness. And yet the problems involved have received a sudden urgency with the publication by Signor PUGLIESE-CARRATELLI of the documents of Hagia Triadha, to which have now been added both the *Pylos Tablets* by E. L. BENNETT, and the second volume of *Scripta Minoa* from the pen of that great and illustrious veteran, Sir JOHN MYRES. This mass of new evidence will concentrate some attention upon the Cypro-Minoan Signary and its offspring, the Classical Syllabary, of which the values are known. DANIEL was able to add eighty monosyllabic and dissyllabic inscriptions from Curium to those already published; and to this total I can now report some substantial additions. At Enkomi Professor C. F. SCHAEFFER has five inscribed clay balls of which one has as many as eight signs, and a text of six signs cut on the handle of a jar. To these Mr. P. DIKAIOS added in 1951 from the same site two more inscribed clay balls. Both excavators, furthermore, have a considerable number of individual signs. At Myrtou Miss J. DU PLAT TAYLOR has recently discovered two inscriptions, each of four signs' length, in addition to six isolated signs on pots. To this last category I can contribute from Old Paphos thirty-three inscriptions; while the Cyprus Museum reports the acquisition in recent months of a seal with four signs. Thus the *inedita* of the last ten years exceed in quality if not in quantity what we already had. I trust that the two sites, Enkomi and Old Paphos, will serve to control DANIEL's conclusions. I am confident that they will add a sufficient number of new texts to enable us to stabilize the Bronze Age Signary.

It is, I imagine, generally admitted that the Cypro-Minoan Signary was imported into the island to ex-

press a non-Greek speech. At what point in time the Achaean settlers adopted these signs for their own 'Arcadian' tongue is, I fear, as yet unknown to us; but that the autochthonous 'Eteo-Cyprian' survived until the end of the Classical period cannot now be doubted. In 1911 MEISTER demonstrated that the language of two syllabic inscriptions was not Greek; in 1924 SITTIG, in raising this figure to seven or eight, associated these exclusively with the autochthonous city of Amathus. Last summer's excavation at Old Paphos has produced in this connection an important result. Two syllabic inscriptions, with eleven and seventeen signs, dated archaeologically to the sixth century B.C., are Eteo-Cyprian. One of these is in itself a notable find: a twelve-sided stele, which clearly carried something in the nature of a stand or tripod, has on each face one excellently cut sign, the incision increasing in width with its depth and stuffed with a bitumen which is still preserved. I know of no exact parallel to this technique.

Now I should add that in the same context was found an inscription which is indubitably Greek, but that does not affect our significant conclusion: since Eteo-Cyprian was spoken at Old Paphos at the close of the Archaic period, we may infer that it was then widespread throughout the island, and not indeed confined to Amathus. Several inscriptions, of Golgi and the hinterland in particular, which have long been rendered into a Greek so dubious as to bring the syllabic epigraphy of Cyprus into serious disrepute, now call for re-examination. This will without doubt substantially increase the Eteo-Cyprian total; but it remains for epigraphy to establish the status and relationship of these two languages, alike at Paphos and throughout the island. In passing, we may note that the discovery of the old native lan-



Kouklia: Old Paphos. A syllabic inscription of eleven signs cut on a twelve-sided stele. The incisions have been stuffed with a bitumen which is still preserved; a find as yet unparalleled.

guage at the ecumenical center of Aphrodite worship throws a fresh light upon the origins of that cult.

THE DECIPHERMENT of the Cypriot Syllabary in 1871 gave an immediate prominence to these inscriptions. All the known texts were included by DEECKE in 1884 in the *Sammlung der griechischen Dialekt-Inscriptions*—excluding the coins, 150 in number. In 1889 MEISTER added 96 to this total in his *Griechischen Dialekte*, and HOFFMANN in 1891 a dozen or so more. This enthusiasm was, however, speedily quenched by the uncritical approach of certain scholars who (as I have noted) gave their profound learning and their high ability to extracting Greek where Greek did not exist. It became correct, therefore, to set aside all this body of documents, with the exception always of the celebrated Dali Tablet, supported perhaps by some brief and unambiguous funerary texts and certain inscriptions of Soli and Tamassus, which could be controlled by their alphabetic and Phoenician versions. This degree of caution was indeed salutary, but is now in some measure outmoded; for a new approach is opened to the inscriptions when, with each ambiguous text, we are permitted to consider the possibility that it may not be Greek. Secondly, since HOFFMANN's day, 180 further inscriptions have been published; and to this figure I am myself able to contribute nearly a hundred *inedita*, which include four over sixty signs in length. The *corpus*, for comparative purposes,



Kouklia: Old Paphos. A mud brick from the walls of Old Paphos inscribed with two syllabic signs. Scale is in centimeters.

has long ceased to be negligible.

Finally, the task of revising DEECKE's famous table of signs in the *Sammlung der griechischen Dialekt-Inscriptions*, now almost seventy years old, has become not merely desirable but possible. Many new forms and one (if not two) signs can be added, but improvement must be sought, not in the introduction of further details and further refinements, but in adopting a palaeographic approach to the Syllabary. DEECKE's arrangement was geographic; but today we wish to know which is the earliest form of each sign and when it first occurred. It is here that archaeology can render us an invaluable service. At Old Paphos we have a growing body of inscriptions which can be securely dated by the circumstances of their discovery to the sixth century B.C.; and I am now devoting much of my time to precisely this matter of a syllabic palaeography. In passing we may note that the complexity of DEECKE's table is in some measure due to the juxtaposition of signs which in extreme cases may be separated by as much as four hundred years. In general, I believe that the earlier forms tend to be the simpler.



Kouklia: Old Paphos. An Eteo-Cyprian inscription of seventeen signs (reverse only is shown here), dated archaeologically to the sixth century B.C. Such inscriptions have hitherto been thought to be confined to the 'Eteo-Cyprian' city of Amathus.



Kafizin. The excavated cave of the Nymph.

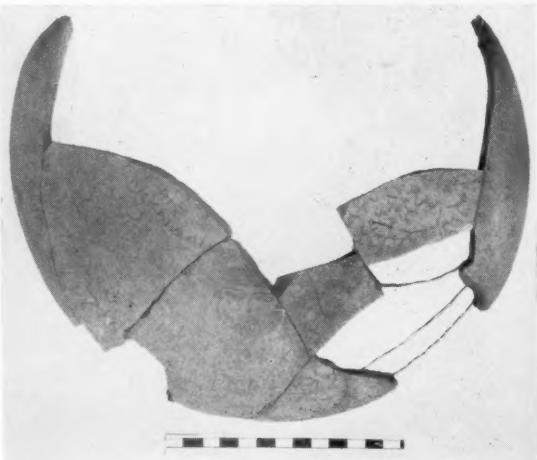
There is for example in the Cyprus Museum a small unpublished stele recently discovered at Marium and dated by the Early Ionic letters on its face to the middle of the sixth century B.C.—with the exception of four mysterious letters on a bucchero jug in New York, the earliest alphabetic inscription in the epigraphy of Cyprus. On the narrow face of this stone is the same inscription in the syllabary: five signs cut with a clarity and a simplicity which are revealing.

I have suggested that approximately four hundred years separate the earliest from the latest known inscriptions of the Classical Syllabary. I base this suggestion upon a recent excavation conducted by Mr. DIKAIOS of the Cyprus Museum and myself at Kafizin near Nicosia. This remarkable site is unique for Cyprus and its significance indeed more than local. Beneath the summit of a conical hill there was a cave of the Nymph *ἐν τῷ στρόφιγγι*, who was likewise styled the Sister (after the celebrated Sister, Arsinoe Philadelphus) and 'she who harkens unto prayer.' I have elsewhere argued that *στρόφιγξ* is here a dialectic form of *στρόθυγξ* and here denotes something like a 'pointed hill.' Now we are already in possession of evidence that over four hundred inscribed vessels were dedicated in this cave over a brief period of eight years, between 224 and 217 B.C. Of these the great majority are the offerings of one Onesagoras who describes himself as tithe-collector and *τακόρος* of the Nymph.

OF THE INSCRIPTIONS forty-five are syllabic, the Syllabary and the alphabet frequently appearing upon the same vessel; and it is of interest to note that the former is exclusively the vehicle of the Cypro-Arcadian dialect, the latter of Hellenistic Greek. Onesagoras would seem to have been a collector of tithes for much of central Cyprus; for in these singular archives we find his dedications, made year after year, out of the quota of such commodities as linseed and flax, paid by the cities of Soli and Lapethus, and it may be of Chytri and Idalium. And sometimes it is a cattle-tax; sometimes the tithe is said to have been disputed or subjected to arbitration, and sometimes it is in excess of the estimate. I hope to continue our investigation beneath the cave

we have already excavated, for there is every prospect of our recovering a sufficient number of new fragments to admit of the complete restoration of this monologue between the votary and his goddess. I shall content myself with the observation that eventually we may recover something of the fiscal arrangements of

Kafizin. An unpublished inscription in Alphabet and Syllabary, recording a dedication to the Nymph from a tax-collector's profits out of the farming of the lucrative tithe in linseed.



Kafizin. Some unpublished sherds datable to the period 224-217 B.C.

the earlier Ptolemies for much of Cyprus; while the mention of Ledra, generally reputed to lie beneath the modern Nicosia, is intriguing indeed, for this city (if such it was) has hitherto been known to us solely from the Assyrian records and from Cyprian history. Finally, the inscriptions of Kafizin give the latest occurrence alike of the Syllabary and of the dialect. Kafizin closes a chapter which has its beginnings in Minoan Crete and the Peloponnese of the Bronze Age.

The Hellenistic inscriptions of Cyprus belong perhaps not so much to Cyprus as to the Hellenistic world. Were it not for the testimony of Kafizin, and the survival of Phoenician at Citium, Lapethus and Idalium until the reign of Ptolemy Philadelphus (283-246 B.C.), it might well be supposed that, when the first Ptolemy swept away the ancient Cypriot monarchies, the old order passed away with them. Funerary inscriptions which dominated numerically the Classical epigraphy of the island, now become singularly rare; and, apart from the epitaphs of certain soldiers and aliens, we find ourselves for these three centuries with little more than one family tomb at Chytri. Religious inscriptions, except in the remoter villages, now document a transition from the ancient native *temenos* to something more like a Greek temple complex; and Cypriot art, which from Geometric times had been exclusively a sanctuary art, now enters (too late for its redemption) the world of affairs. Thus at Old Paphos no less than seventy-six inscribed statue bases of the Hellenistic period survive, against a possible one of Late Classical times; and the temples became crowded with the indifferent portrait statues of the great—that is to say, of the Ptolemies and their officials—in place of the standardized ex-voto figures which for centuries had represented the ideal devotee. That decrees, letters,



and other public documents are almost entirely wanting (the whole Hellenistic age can offer us only eleven) must be ascribed not to any peculiarity of Cyprus but to the depredations of the lime-kiln.

TO ASSESS, HOWEVER, what we have, DITTENBERGER included in *Orientis Graeci Inscriptiones Selectae I*, no less than forty-one Cypriot texts. Many of these have now been revised and improved, while the number of inscriptions which must come under consideration for any future revision of *OGIS* has been more than doubled. Among the *inedita* I would mention a considerable fragment of a *lex sacra* from the remote hill country above Paphos; a statue-base of a second and unknown son of the great Polycrates of Argos; a dedication in honor of a citizen of Arsinoe in Pamphylia who became the Ptolemaic commandant of the Cilician fortress of Charadrus. From the interesting excavations of the University of Pennsylvania at Curium, with the permission of Dr. B. H. HILL, I shall mention only evidence which points to some contact between Apollo of Hyle and the god of Delphi. Certain fragments of Curium, moreover, prove that this city possessed in the third century B.C. the full institutions of a Greek *polis*: an important conclusion, for it has hitherto been maintained that the cities of Cyprus were deprived of such institutions until the close of the Hellenistic era.

Between the reign of the second Ptolemy Soter and the principate of Augustus there is an epigraphic vac-

uum. For the solitary inscription which some have ascribed to the Republic, a Latin dedication of the *conventus* of New Paphos to the proconsul M. Vehilius, belongs with greater probability to the outset of the Empire. As for the annexation of the island to Rome, the proconsulship of Cicero, the brief return to Egypt, the inscriptions give us no hint; and it is clear that the Republican episode was one of misrule and distress. The *Inscriptiones Graecae ad res Romanas pertinentes* include sixty-nine Cypriot texts (as against one hundred and seventeen, for example, from Cilicia), which range in time from Augustus to Severus Alexander (excluding a milestone of Aurelian and Maximian). I can report that the bulk of these has now been revised; and secondly, that fresh inscriptions, of which twenty are still unpublished, could more than double this total. Curium has proved richer for the Roman than for the Hellenistic period; and here I would mention a long hymn in honor of Antinous, and two monumental inscriptions of Trajanic date, recording constructions at Apollo's temple and the building of a paved way to lead to the propylaeum of the Paphos road. From one of these documents it would appear very probable that the emperor visited the island on his voyage from Lycia to Antioch in January of the year 114 A.D.

An inscription of Tremithus of the seventh year of Domitian is proof of Jewish settlement twenty miles to the west of Salamis, in what was then perhaps a small town; but its significance lies not so much in its content as in its dating, which both baffles and excites me. Domitian's seventh year is amplified by a refer-

ence (seemingly) to that emperor's birthday festival; and then we have a double synchronism between the fourth day of the Hebrew month Shabát and the twenty-fifth of Tybi; this latter being further qualified as the first day. Here, before the letter *alpha* there appears a mysterious symbol which resembles a ligature of *rho* and *psi*. Now we know that Paul and Barnabas taught in the synagogues of Salamis forty-three years before this inscription was cut, and we also know that Tremithus was the see of the first Cypriot bishop; but the incautious impulse to connect this symbol with an Apostolic Christianity must, I think, be resisted resolutely until there is further evidence. I may add that the funerary *cippi* of Cyprus, which record the names of the dead with an unparalleled monotony for the first three centuries of our era, show some slight trace of cryptic Christianity. There are no tomb curses in Cyprus of the familiar Anatolian type, but in their place we have the name in the vocative with the patronymic, and after these the familiar *χρηστὲ* (*χρηστῆ*) *χαῖρε*. I have noted certain instances in which the two *chis* have been tilted into two crosses.

**W**E ARE INFORMED by the biographer of St. Spiridon that during the first half of the fourth century of our era Cyprus was devastated by drought and famine. It is perhaps, therefore, significant that for the fourth century, except for sundry milestones, there are no datable inscriptions in the island. In a recent discussion of Early Christian epigraphy in Cyprus, I listed sixty-one texts, of which the majority can be ascribed to the sixth century. These con-

vey to me the impression that the ancient population of the villages had been partially exterminated by the disasters of the third and fourth centuries, but had now received heavy reinforcement from sectaries and refugees of Syria and northern Mesopotamia. The minor *floruit* that ensued was short-lived; for under the Caliph Othman began the raids which reduced the island for three centuries to a no-man's-land between Islam and Byzantium. But of that the only epigraphic testimony is a pair of early Islamic tombstones.

New Paphos. An unpublished inscription which informs us that the orator T. Clodius Epius Marcellus, prosecutor of Thrasea Paetus and friend of the Emperor Vespasian, legate of Lycia and for three years governor of Asia, was also proconsul of Cyprus.





Jarmo: uppermost level of the operation with the colorful prayer rugs of the workmen dotting the excavation. A few stone house foundations are becoming recognizable.

## Early Food Producers: EXCAVATIONS IN IRAQI KURDISTAN

By Linda S. Braidwood

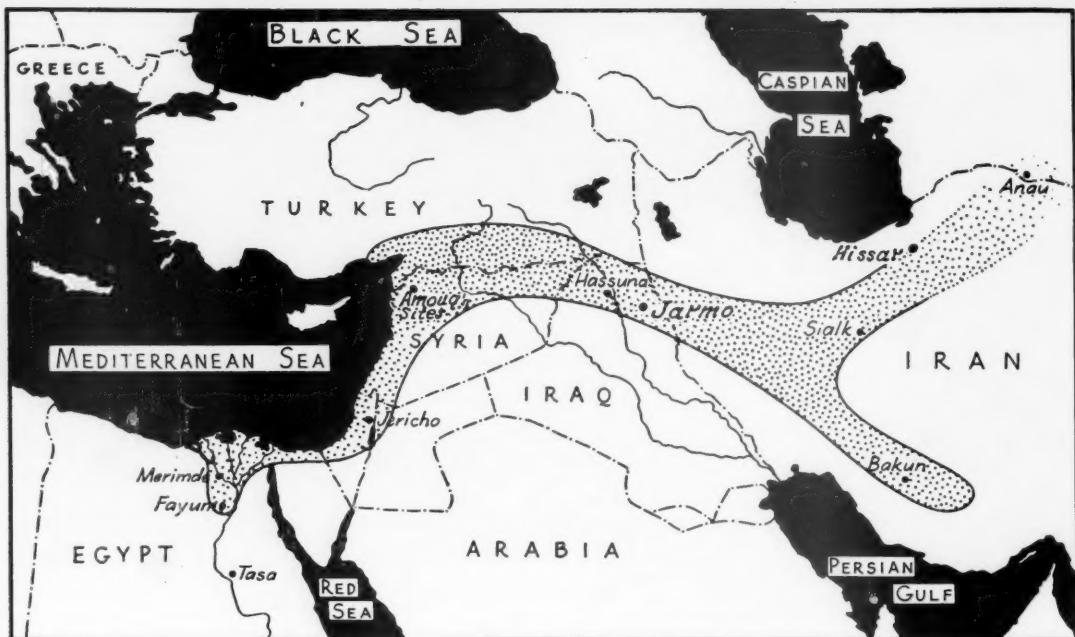
*The Oriental Institute's staff at Jarmo consisted of Robert J. Braidwood, director, Robert Adams, Vivian Broman, Elizabeth West, and Linda Braidwood. Other excavations during the same season and in the same area under the auspices of the American School of Oriental Research had as staff: Bruce Howe, Herbert Wright, Frederik Barth, and Robert Braidwood acting as director. The Iraq Directorate General of Antiquities greatly aided us in every way. It also supplied us with Sayid Sabri Shukri as Department representative, who proved most helpful in all matters.*

—L. S. B.

THE NEAR EAST IS WELL KNOWN ARCHAEOLOGICALLY as the "Cradle of Civilization." The early flowering of historic Mesopotamia and Egypt around 3000 B.C. was made possible—in an economic sense—by a well established system of food-production. It is inconceivable that any civilization could have risen and been supported on a food-gathering economy, that is one based on hunting, fishing, and berry-gathering alone. An assured food supply and the leisure time it gave to think about matters other than food were essential as a background to civilization.

What is known of the origins of agriculture, the change in man's way of life that made civilization possible? It has long been thought that the Near East was the original home of plant and animal domestication. Various people have observed that wild plants and animals of domesticable types, such as wild wheat, barley, sheep, goat, and pig, were to be found growing in a wild state in the Near East in recent times and even are today.

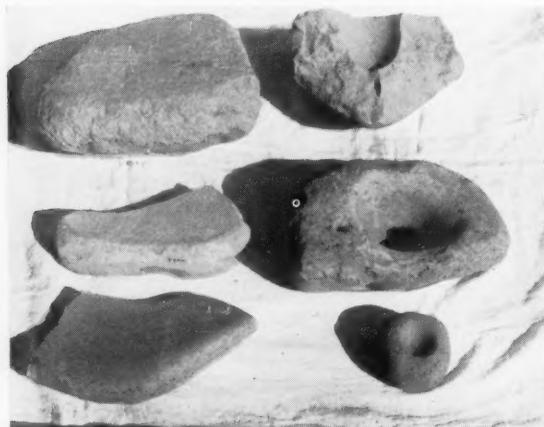
Archaeological excavations in the 1930's confirmed the idea that plant and animal domestication certainly



Map: showing zone of occurrence of the earliest known village materials. Karim Shahir and Palegawra lie slightly to the east of Jarmo.

came early in the Near East. Gradually archaeological evidence has accumulated to enable us to trace backward in time from historic Mesopotamia and historic Egypt through various prehistoric stages to a horizon of early farmers and villagers. These villages of farm-

**Jarmo: milling stone and mortar fragments.**  
Some signs of an agricultural community.



ers and herdsmen, all living much the same simple life, were not confined to classic Mesopotamia and Egypt. They were found scattered over a wide area—northern Egypt, Palestine, Syria, northern Iraq, northern Iran—located usually in the highlands where there was sufficient rainfall to give a regular yearly crop.

Although these simple farming villages were early in time—roughly about 4500 B.C.—it was quite evident that they were well settled agricultural communities and not novices at domestication. Where would one find communities closer to the origins of plant and animal domestication?

**I**N 1950-1951 WE WORKED on this problem in the Kurdish foothill country of Northern Iraq. Our main excavation, undertaken for the Oriental Institute of the University of Chicago, was on the site of Jarmo. From a few weeks of trial excavation in 1948 we had received enough material to show us that Jarmo was a step earlier than the already known farming villages and as such needed further excavation.

The site of Jarmo is located on a bluff, with a wadi at its base, and covers about three acres. Since the site

Jarmo: mud-walled houses in main operation, level 5. The white striations on room floors are reed impressions; an ovoid oven appears near the center.

covers such a large area it was impossible to do more than obtain a good sampling of its contents in our 1950-51 season. There is a depth of twenty-five feet of habitation debris at Jarmo (about a dozen levels in all) representing one cultural stage with relatively little change from the earliest to the latest building phases. Jarmo was definitely a village site. Its houses were simple mud-walled structures with rectangular rooms, some containing ovens. The mud floors were usually laid over reeds. In some of the levels the walls were stone-founded.

The inhabitants of Jarmo used stone for many of their articles of daily use. Their tools were chipped mainly from flint and obsidian and included a great proportion of microlithic tools. The obsidian was im-

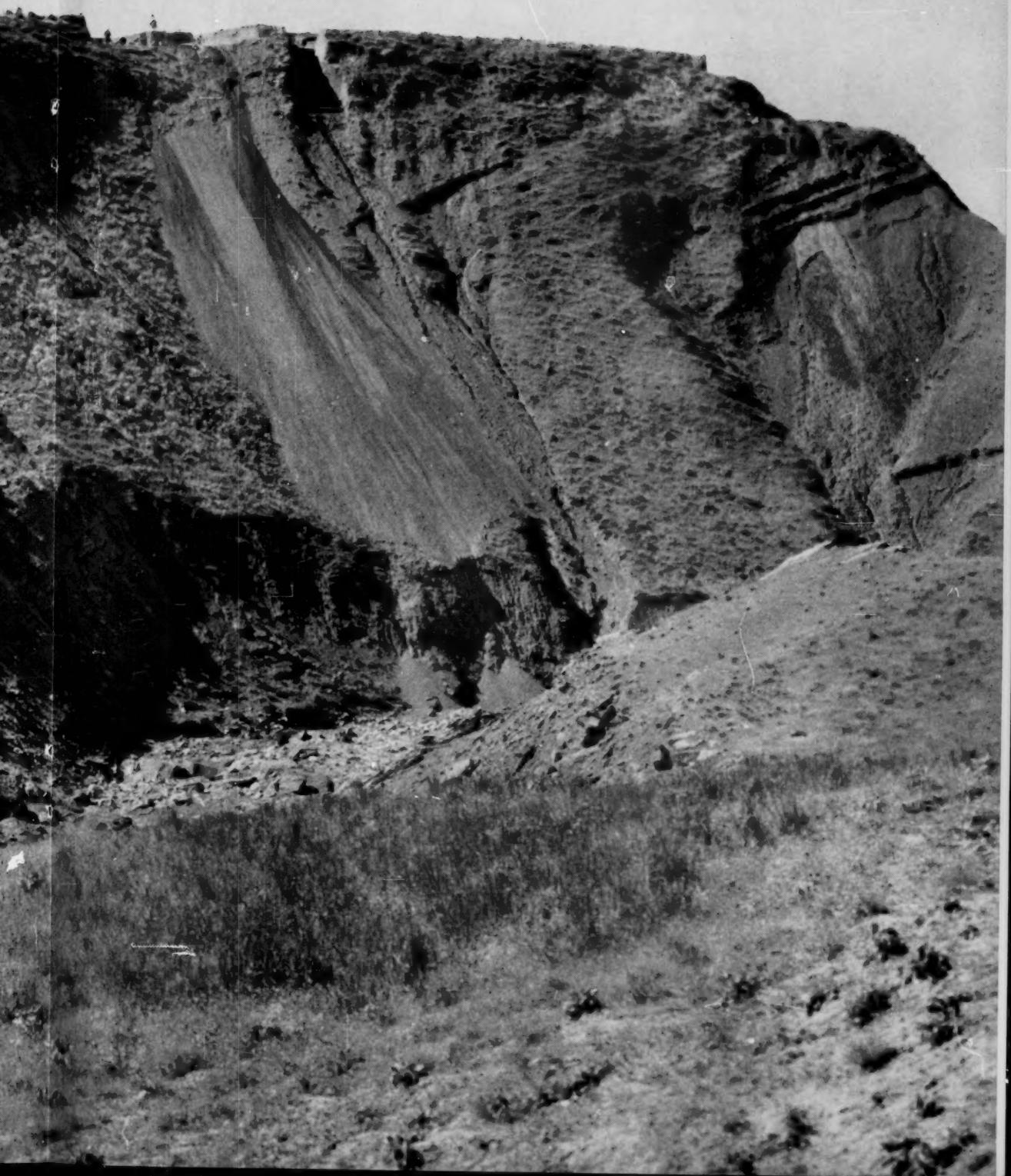


ported—presumably from the nearest source now known, that in the Lake Van region about three hundred miles to the north—and implies regular trading relations. Heavy tools, such as axes, mauls, and hammer stones, were made of non-flinty stones and were ground and polished or just pecked into shape. Stone was also used for a great variety of handsome stone bowls, rougher mortars, querns, pestles, and rubbers. Many decorative objects such as beads, pendants, and bracelets were also made of stone. A great many of the stone objects (and those of bone and clay as well)

(Left) Jarmo: section of a fragmentary oven, showing several rebuildings of its floor.

CENTERFOLD: site of Jarmo seen from the north, from the opposite rim of the wadi. Photographic tower near the center shows the position of the major operation. The hillside served as a most convenient dump for the excavations. Further to the right, a notch in the ridge locates the first test operation.







Objects found at Jarmo: (above, left) stone celts; (right) bone materials—spoon bowl, carved spoon handle, and pinhead; (below, left) stone pendants; (right) clay animal figurines.

showed a high degree of creativity among the Jarmo inhabitants.

Bone was used for both useful and more purely decorative objects such as awls, needles, pins, spoons, beads, and rings. Clay was employed extensively at Jarmo. Its greatest use was in articles that cannot be classified, in our sense, as strictly useful: human figurines (some of them probably representing the goddess of fertility), animal figurines, beads, and a great variety of small balls, cones, and stalk-shaped objects.

Strangely enough the earliest inhabitants of Jarmo did not make portable dishes of pottery. They made fairly durable large basins by digging a hole in the ground, lining it with clay, and then building a fire inside to harden the surface. But the only portable containers they had were stone bowls and probably baskets (waterproofed with bitumen), and very possibly containers made of animal hides. The Jarmo inhabitants responsible for the accumulation of the upper third of the deposit *did* have pottery dishes. Since the earliest pottery found in the Jarmo deposits was well made, we believe that the idea of pottery-making was brought to Jarmo from outside. The Jarmo people themselves never did learn to make good substantial pottery although they were extremely adept at working plastically with clay.



Jarmo: (above) a fragmentary stone saucer with a nicely detailed shape; (below) coarse pottery dish.

Objects found at Karim Shahir: (above) chipped stone axes, some with polished bits; (below) stone pendants and beads.

JARMO, THE EARLIEST village found to date, was a community of herdsmen and farmers. Surprisingly enough they seem to have done relatively little hunting. Of the many animal bones found in the excavations, only five percent are of definitely wild types of animals. The rest are all of domesticable animals—goat, sheep, pig, cattle. Although it is seldom possible for an expert to tell from an examination of bones whether an animal was wild or domesticated, we are certain that animal domestication was extensively practiced at Jarmo. The first convincing factor is the large number of bones of domesticable animals found; the second is that a great share of the bones in the sheep/goat category were those of yearlings—a selection that simple hunters are not able to make. These preliminary observations on the animal bones in no way indicate whether Jarmo represents an early or later stage in animal husbandry.

The Jarmo picture is even more exciting as concerns plant culture. The many milling stones, mortars, pestles, sickle blades, as well as the carbonized grain kernels found in the excavations, showed us that the Jarmo inhabitants were active farmers. At the advice of Mr. HANS HELBAEK, the botanist who was to study the grains, we looked for and found grain im-



pressions, and these proved more revealing as to species than the actual grain itself. The impressions were found in the clay of the house walls and particularly in the clay of the oven floors. From a study of the grain and especially from the impressions, Mr. HELBAEK has established the fact that the Jarmo farmers were at a very early stage of wheat and barley domestication.

A few other excavations were undertaken in the same general area during the season, under the auspices of the American School of Oriental Research. The most significant of these—in view of throwing more light on the origins of plant and ani-

Karim Shahir: principal occupation level, which was only about 25 cm. below the modern surface, with incomprehensible scatter of rough stones.



mal domestication—was the excavation of Karim Shahir. This site was situated on an eminence a few miles up the wadi from Jarmo. It was clear from the excavation that Karim Shahir was radically different from Jarmo. It was earlier in time and was clearly no village in the sense of Jarmo but rather a sort of settlement or encampment covering an area roughly two acres in size. The depth of deposit was thin and indicated a relatively short occupation of the site, perhaps seasonal.

There was nothing tangible in the way of architectural remains, only traces of rough stone "paving" that may have served as flooring. The main category of objects found was flint tools, including many tiny tools (microliths). Ground and pecked stone objects included celts, mortars and millstone fragments, beads, pendants, and bracelets, only a small number of each. Two small enigmatic clay figures show that the Karim Shahir people were beginning to use clay as a plastic medium.

**A**ND WHERE TO PLACE the Karim Shahir people as domesticators? No grain or grain impressions were found in the excavation, but the few mortars and millstones as well as the few sickle blades found indicate at least some feeble attempt at reaping, if only wild grasses and grains. Well over half the animal bones in the excavation were those of domesticable animals, in the main sheep, goat, and pig. This percentage is large enough to suggest that the Karim Sha-

hir people were already domesticating animals to insure their food supply.

Karim Shahir definitely indicates a new way of life. The difference becomes more apparent when Karim Shahir is contrasted with the cave-shelter of Palegawra, an excavation of a stage earlier than Karim Shahir undertaken during the same season. Palegawra represents a relatively late phase in a long history of cave-dwelling. There are no indications at Palegawra to show that the people were anything but simple food-gatherers intent on food and clothing problems, hunting animals and probably gathering berries or other edible plants for food. The only objects found representing the work of the Palegawra people were their flint tools, which also included many tiny tools.

**P**ALEGAWRA TO KARIM SHAHIR to Jarmo—these represent a tremendous advance in man's ability to cope with his environment. The Palegawra cave shows the simplicity of a wholly food-gathering existence. The open air settlement of Karim Shahir with its hints at incipient husbandry—and perhaps cultivation—opens the way for an entirely different way of life. In the thriving village of Jarmo we see some of the results of this new life based on effective animal husbandry and grain cultivation, although grain cultivation seems to have been fairly recent in origin. The most striking feature of Jarmo, in contrast with the earlier sites, is the amount of leisure time that was achieved by effective plant and animal domestication. This leisure appears in the great number and variety of objects that served in a decorative or perhaps in a magico-religious capacity and in the painstaking craftsmanship evident in most of the objects.

We can only guess that the new leisure must likewise have acted as an impetus to the thoughts, beliefs, and actions of the Jarmo people. In Jarmo one can already see the first great step forward—the beginning that was to make possible the early appearance of civilization in Mesopotamia.



Palegawra cave: workmen in right middle ground give scale.

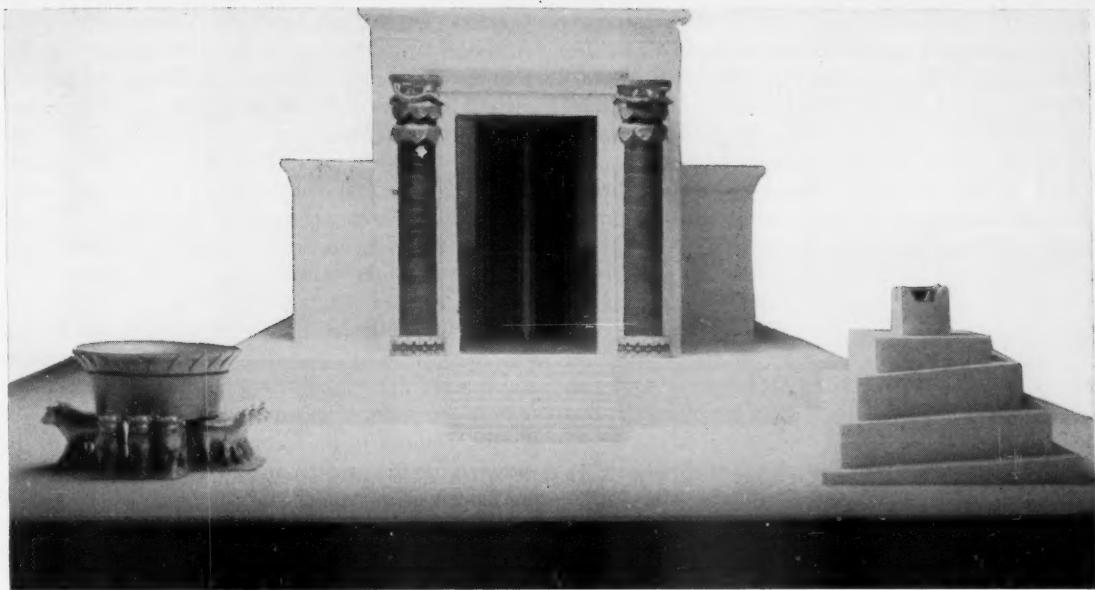


Photo Carolyn Carter

Front view of Temple, with "Molten Sea" at left, Altar of Burnt Offering at right

The restoration of the Altar follows Prof. ALBRIGHT's interpretation of *Ezekiel 43:13-17*. Archaeological data is insufficient to supply details of decoration.

## A Reconstruction of SOLOMON'S TEMPLE

By Paul Leslie Garber

E. G. Howland, professional model maker of Troy, Ohio, at his own expense skillfully engineered and constructed this scale representation of Solomon's Temple. The research was done by Paul Leslie Garber, A.B., College of Wooster, 1933; B.D. and Th.M., Louisville (Kentucky) Presbyterian Seminary, 1936 and 1937; Kearns Fellow, Duke University, Ph.D., 1939. Since 1943 Dr. Garber has been Professor of Bible at Agnes Scott College, Decatur, Georgia.

THE TEMPLE WHICH HIRAM OF TYRE designed and constructed for King Solomon is the Bible's most famous building. References to it, its predecessor the Tabernacle, and its successors the temples of Zerubbabel and Herod, appear in more than half of the Old Testament books and in nearly half of the New Testament books. Extended descriptions of the First Temple and its furnishings are given

in I Kings 6-8, II Chronicles 3-4, Jeremiah 52, and Ezekiel 40-42. The structure, according to the Book of Kings, took seven and a half years to complete. It stood from about 950 to 586 B.C. as the jewel of Jerusalem. Its fabled splendor was due to the excellence of its materials and to the skillful workmanship which went into its construction.

The appearance of this place of worship has at-

tracted the imagination and creative efforts of many artists, draftsmen, engineers and model makers. The earliest known European efforts were by B.H. LAMY (Paris 1720) and A. ALTSCHUL (Amsterdam 1724). More than thirty different works were published on the Solomonic Temple during the nineteenth century.

Lacking factual information, early reconstructions relied almost exclusively upon artistic taste and imagination. Archaeology relevant to the Bible is an achievement of the twentieth century. This new-found body of information now makes possible a more accurate and objective reconstruction of Solomon's temple. It is clear that impressions created by such venerable and oft published reconstructions as that of CONRAD SCHICK (1896) must be regarded as outmoded and obsolete.

The Howland-Garber model began with a teacher's search for a print of an authentic reconstruction of the Temple of Solomon to be hung in his classroom. He was directed to an article, "Solomon's Temple Resurrected," in the *Biblical Archaeologist* for May 1941, by the editor, Professor G. ERNEST WRIGHT of Mc-

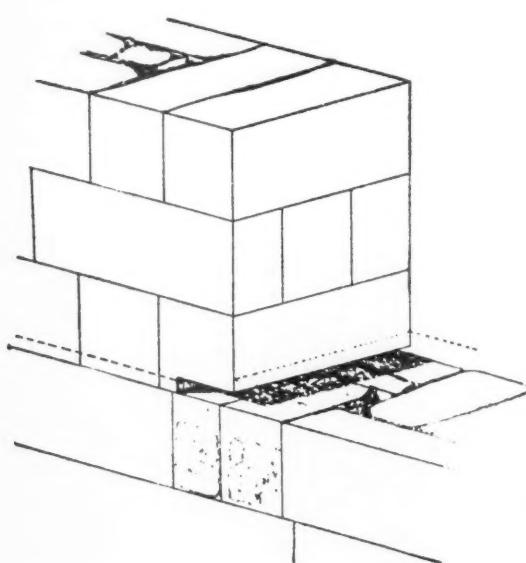
Cormick Theological Seminary. This preliminary assemblage of archaeological data was supplemented by four and a half years of study, including one summer on a Carnegie Foundation grant. The model represents 3600 man-hours of actual construction and is valued at ten thousand dollars. The scale is  $\frac{3}{8}$  inch to the cubit and the actual distance from the court pavement to the top of the cornice is about 15 inches. The model is on exhibit at Agnes Scott College, Decatur, Georgia, where it was first shown to the public in the fall of 1950.

The method by which the appearance of the Temple was reconstructed, and the archaeological sources which were drawn upon, are best shown by illustration. In the series of pictures which follows are shown first the exterior of the Temple (a nearer view of the entrance appears on the COVER), then the interior and the Temple furnishings.

Those permitted inside the Temple of Solomon were few indeed. It was no place for "congregational worship." But it may have been that worshipers standing in the courtyard, priests and laymen alike, could have seen through the inner door the Ark and its attendants, the giant cherubim, and so had their confidence strengthened that His "eyes were open toward the place whereof Thou hast said, 'My name shall be there: to hearken to . . . prayer.'" (I Kings 8:29.)

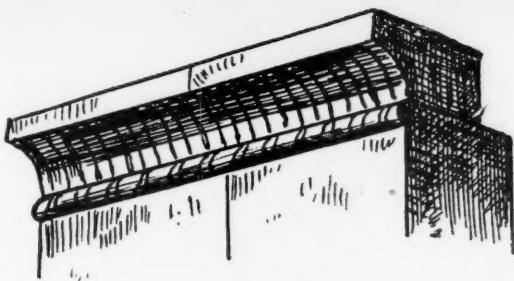
**Phoenician masonry (Reisner et al., *Harvard Excavations at Samaria, 1908-1910*)**

The great limestone blocks used in the Temple walls and raised basement, many twelve and fifteen feet in length, were of uniform tier height (approximately one and a half feet). They were laid in the style of masonry current in that time, as is clear from excavations at Megiddo and Samaria. The drawing shows a part-ashlar wall uncovered at Samaria.



**ON THE COVER** is a close-up view of the Howland-Garber model, by Carolyn Carter, staff photographer for the Atlanta Journal

*Reprints of this article may be obtained from the Business Office of ARCHAEOLOGY, at Andover Hall, Cambridge 38, Massachusetts, at twenty-five cents each. Larger quantities may be ordered at lower prices: \$5.00 for twenty-five copies, \$18.00 for one hundred copies.*



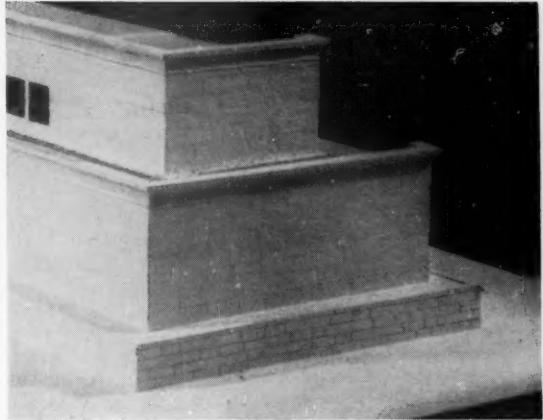
Cornice at Karnak, Egypt (Perrot and Chipiez, *Egypt I*, fig. 67)

Phoenicians of Solomon's time traveled widely. Everywhere they went they were both teachers and learners in the arts. They did not imitate; they incorporated what they learned into their own mode and style. Phoenician architecture of the tenth century B.C. showed individuality. These people had, however, borrowed from Egypt, mainly Egypt of an earlier period. The Egyptian "streamlined cornice" used on the Howland-Garber model was employed on the Karnak temple some three centuries before the time of Solomon.

#### Temple model from "northeast" corner

It is generally assumed that Solomon's Temple, like many of the ancient world, was located with reference to the sun's rising and setting. If the Temple was built on an east-west axis with the Holy of Holies at the east, the slanting rays of the setting sun would linger longest through the open tall doors of the Temple, shedding its light as far as possible into God's earthly sanctuary.

Photo E. G. Howland



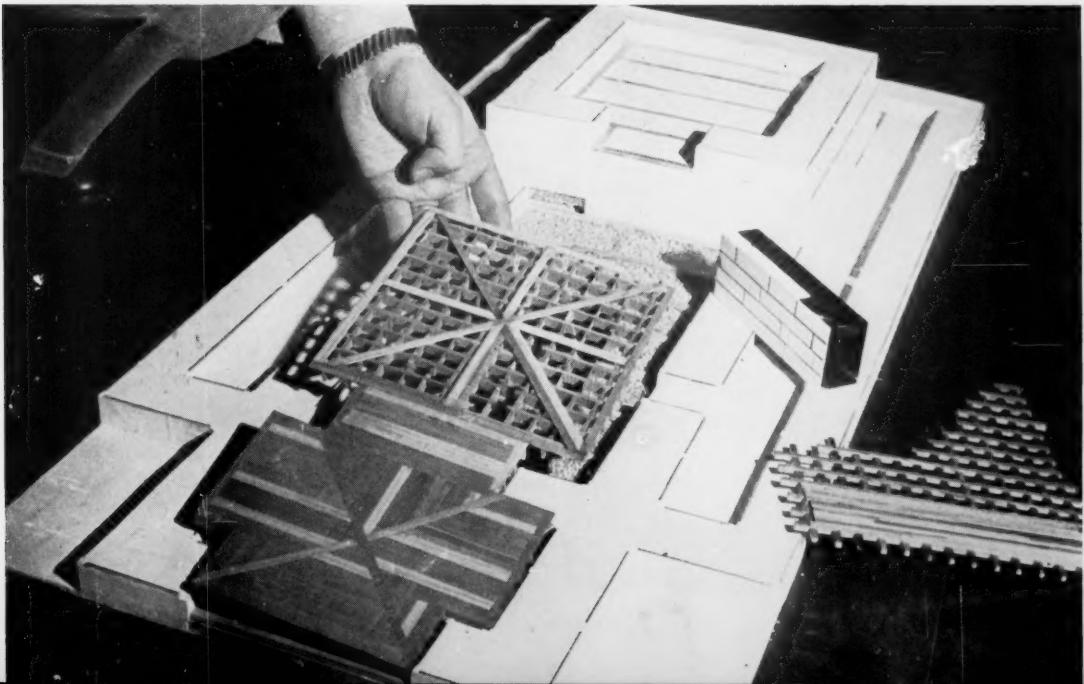
#### Wooden construction of the Temple

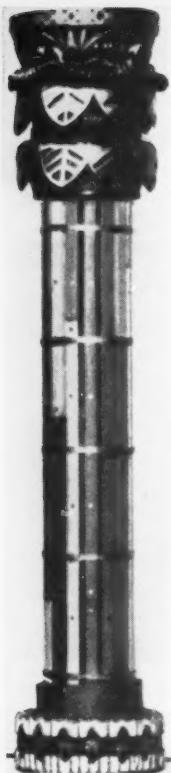
The parts of the Temple which were made of wood suggest the use of a kind of prefabrication, perhaps by the method called "pallet" construction. A pallet in this sense is a large, self-supporting piece so constructed that it may be covered with boards and used as a floor, ceiling or wall panel. These could have been manufactured outside the Temple area, carried into the structure and put in place silently. It thus appears not improbable that, as I Kings 6:7 states, Solomon's

Temple was erected without the disturbing sound of a hammer or any other tool of iron being heard during the period of construction.

Nails might have been used in making the pallets. Discovery at Ezion-Geber of spikes made of copper was one of Dr. NELSON GLUECK's contributions to our knowledge of the age of Solomon. Mr. HOWLAND made the model's spikes in scale size and drove each one in separately.

Photo E. G. Howland





### Pillar in the Temple porch

The two free-standing columns which stood in the porch of the Temple, and which were called by Solomon *Jachin* and *Boaz*, are seen in the front view of the Temple, as well as in the figure on the opposite page.



### Incense Burner from Megiddo (G. Schumacher, *Tell el-Mutesellim I*, frontispiece)

The design for the chapiters (capitals) of the pillars was suggested (by Professor H. G. MAY) by this "incense burner" which was represented on a colored wall painting found at Megiddo. Strands of pomegranates, carefully described in *Kings*, have been draped around the chapiters. Each chapter has two hundred in two strands of one hundred each. Each pomegranate, made to scale and  $1/16$  of an inch in diameter, was individually cast following a model found at Megiddo by the Oriental Institute.

### Bronze door plaque

The shafts of the free-standing columns were twenty-seven feet high and about four feet in diameter. *Kings* describes them as single castings of "brass," that is, copper alloy. We do not know that the ancients were able to make single castings in such large sizes. We do have repeated instances where castings of metal plates—such as the bronze door plate shown to the left—were made to be fastened to some wooden wall or post. This suggests that Solomon's pillars may have been made of cylindrical, cast, copper bands slipped over a built-up copper post. The column would then give the appearance of a single casting but would be made in a way we know was possible in the time of Solomon.



Photos Oriental Institute

### Column base from Tell Tainat

The Bible does not mention bases for these columns. From similar structures known archaeologically, stone bases may be assumed. To the right is a carved stone column base from the palace at Tell Tainat; it is now in the museum of the Oriental Institute, University of Chicago.



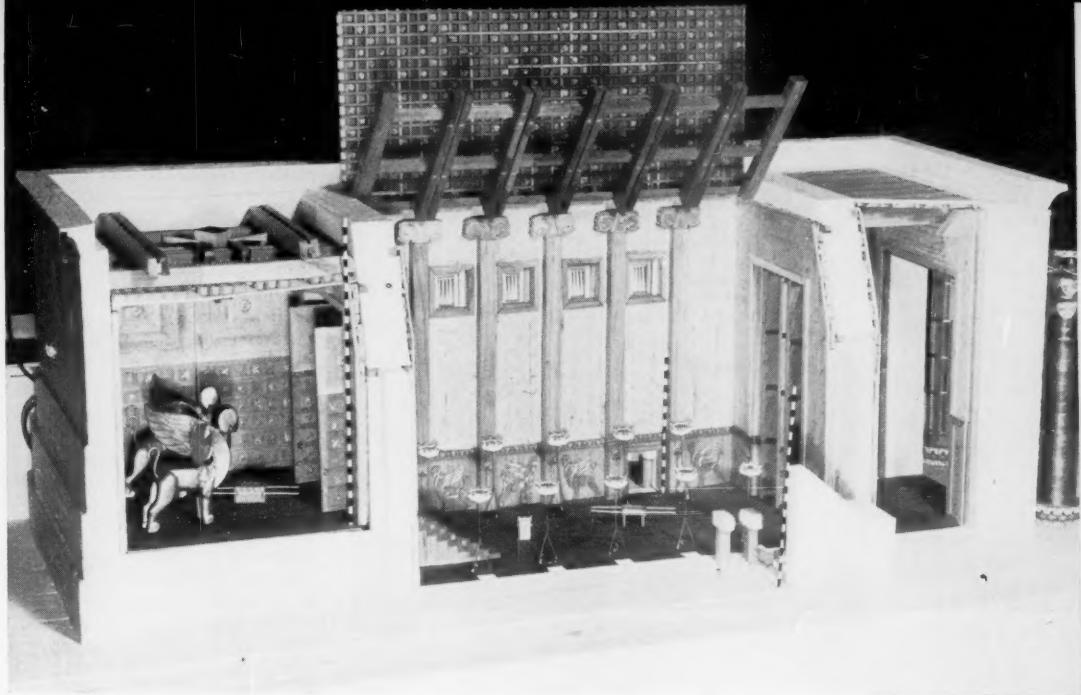


Photo E. G. Howland

#### Interior of the Temple

The Temple was basically a house of two rooms arranged lengthwise. The entrance was on the short side through an open *Porch* which sheltered the doors. The larger room, the *Holy Place*, was sixty feet long, thirty feet wide and forty-five feet high. The inner room, the *Holy of Holies*, was a cube of thirty feet. A lowered ceiling and raised floor in the inner room explains the difference in the height dimensions.

Fabricated cedar I-beams span the *Holy Place* and support the ceiling pallet. The late Dr. J. A. MONTGOMERY wrote in his volume on *Kings*, "The crossing of the rafters at right angles formed hollow squares, in technical phraseology, coffers; these may have been further set forth by decoration as in modern architecture."

The *Side Chambers* in the model are entered from the interior rather than, as usually shown, from the outside. This follows a word-study by Prof. LEROY WATERMAN. Since the side chambers were used by priests for storage and by the king as national "treasure vaults," an interior entrance to the vaults seems a likely arrangement.

The *Star of David* design was found incised on a stone at Megiddo. This pattern of interlaced triangles is incorporated

#### Limestone pivot stone

Archaeology's best suggestion to date for a "cornerstone" in Solomon's Temple is a door socket. The Temple doors swung on metal-tipped pivots set in stone sockets. From earliest times this device was used for large doors in Egypt and Mesopotamia. Beneath such stones were deposited valuables and records. The exposed surfaces of the sockets bore, as in this example from the Gimilsin Temple at Ur, words of dedication or, in other instances, words of exorcism. Thresholds were thought to need special attention that the house might be guarded at the entrance from enemies, both human and spirit. I Kings 16:34 refers to the city gates of newly rebuilt Jericho having been "set up . . . upon Segub, his (Hiel's) youngest son" to offset Joshua's curse (Joshua 6:26).

in the flooring of the *Holy Place*. It provides an appropriate pattern of bracing for the large flooring pallet (30 x 60 ft.).

"He who thrones (or is enthroned upon) the cherubim" is a well known designation for the God of the Hebrews. His presence may have been thought invisibly enthroned upon the *Ark*, which stood between the cherubim. These were guardians, as at the Garden of Eden. They may have been considered God's aids in moving through the heavens. In any case, these colossal (fifteen feet high; wingspread fifteen feet), carved and gold-covered statues gave cosmic dignity to Him to Whom, according to *Isaiah* 6:3, cherubim and seraphim continually cry:

"Holy, Holy, Holy is the Lord of Hosts;  
The whole earth is full of his glory."

Standing in the *Holy Place* is the *Table of Shewbread*, on which the priests daily arranged the twelve loaves of unleavened bread.

Photo Oriental Institute



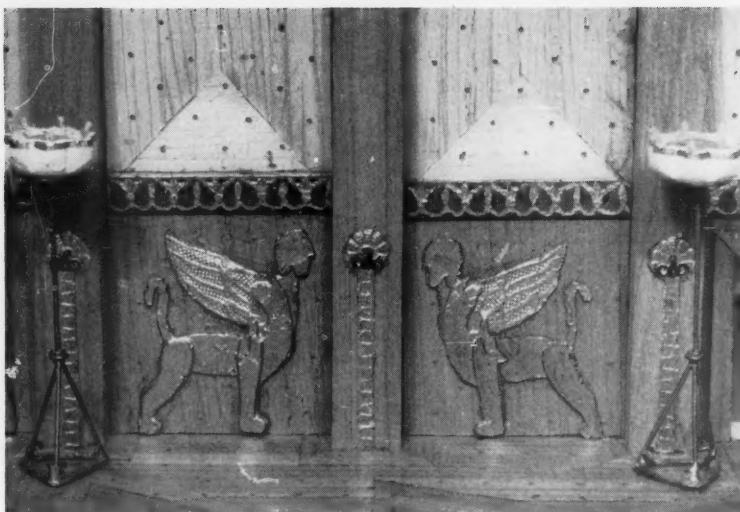


Photo E. G. Howland

**Pilaster capital from Megiddo (May and Engberg, *Material Remains of the Megiddo Cult*, plate X)**

The lines of this stone capital found at Megiddo and associated with a "temple" of about the time of Solomon suggest a design familiar to us as the Ionic capital of Greek architecture. Known examples from the Near East, however, antedate the earliest Greek usage. The artist of the Oriental Institute Megiddo expedition suggested the use of these capitals for pilasters.

The ceiling height of the *Holy Place* was forty-five feet. The effect of these tall pilasters, made of East India sandalwood—close-grained and yellowish in appearance; five of them equally spaced along the sixty-foot *Holy Place* walls—was to add to the sense of height in the room.

**Wainscoting of the Holy Place**

Carved wainscoting went completely around the interior walls of the *Holy Place*. The designs reached seven and a half feet from the floor. The border of open lilies and buds follows the I Kings 6:8 description, "knops and open flowers." Exact repetition of design seems to have been a favorite Phoenician technique. Oversize unearthly figures facing "trees of life" carved on towering pilasters effectively created a desired "other world" atmosphere.

"In-lay" is a more adequate rendering of the verb in *Kings* usually translated "over-lay," according to Dr. WRIGHT. The floor was not, then, "over-laid" with gold. Rather, carvings such as these were highlighted by skilful use of gold inlay.



**Ivory carving representing a window**

The clerestory windows of the Temple model consist of a set of recessed frames placed within the thick (7½ feet) walls. The recessing on both sides of the opening tended to keep out the elements while the bars probably kept out all but the smallest birds (*Psalms* 84:3).

Ivory carvings virtually duplicating this excellent example from Babylonia have been found at Megiddo at levels representing the age of Ahab. I Kings 22:39 alludes to the "ivory palace" this monarch built in Israel. On the ivory plaque shown here a goddess of fertility peers from the window in her guise as a sacred harlot.

Photo Oriental Institute





Photo Oriental Institute

**"Seven Branched" lamp (Albright, Tell Beit Mirsim I, plate 23B)**

If the *menorah* form of the lampstand was used in the period of the Israelite monarchy, the example is yet to be known. Clay lamps made as bowls to hold olive oil and with seven wicks to each lamp are commonly found in Iron Age I sites. It may confidently be assumed that they were in use in Solomon's time.

**Metal stand from Megiddo**

There is no textual evidence regarding the appearance of the lampholders, as the word "candlestick" more specifically means. This Megiddo stand with a tripod base—an inverted proto-Ionic capital at each foot—served as a pattern for the Howland-Garber model reconstruction. Others like it are known, some dating as early as the twelfth century B.C.

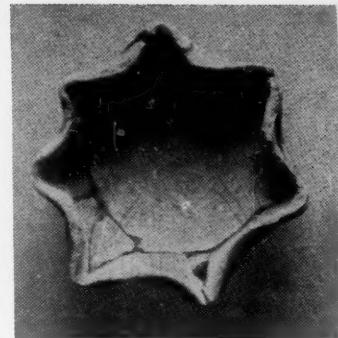


Photo E. G. Howland

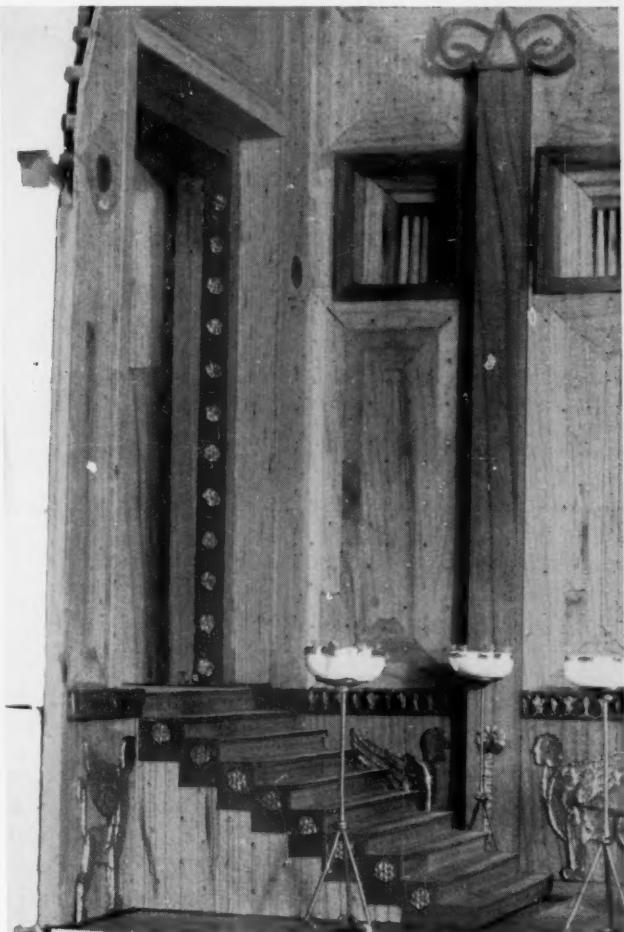
**Doorway leading to the Holy of Holies**

It was suggested by Prof. KURT GALLING of Halle, Germany, that Solomon's inner sanctuary, like those of known Canaanite temples, had a floor elevated above that of the rest of the Temple. This feature is seen also in the palace chapel excavated at Tell Tainat in northern Syria.

The partition between the *Holy Place* and the *Holy of Holies* has not been made the thickness of boards as I Kings 6:16 might seem to imply. This impression may have come from observation of the cedar paneling.

The phrase "a fifth part" applied to the doorposts of this doorway in I Kings 6:31 is here interpreted as referring to the cross-section of the door jambs and lintel, that is, being so shaped as to have five exposed faces. This was done by beveling the corners of the squared doorposts; the beveled faces are shown here colored azure blue and decorated with rosettes of gold. Functionally such a door jamb permitted the doors when open to swing in a wider arc and so reveal to viewers from the *Holy Place* a more comprehensive sight of the *Holy of Holies*—its sacred *Ark* flanked by the escorting giant cherubim.

Note that wall panels may have been fastened to the masonry walls by beams attached to their reverse sides being wedged into prepared slots in the stones. With expansion of beams, due to absorption of moisture, the wood is fitted snugly and the paneling is secure.





Ivory from Megiddo (Loud, *The Megiddo Ivories*, plate 4)

We may no longer think of biblical "cherubim and seraphim" as plump, winged infants. They were considered in Solomon's time as hybrid creatures—part lion, part bird and part man. An ivory carving found at Megiddo shows a man of some importance seated "between" the cherubim, presumably one carved on each side, that support his throne.

### The Molten Sea

Before the Temple stood this great bowl, "the molten sea." As described in I Kings, chapter 7, it was fifteen feet in diameter and seven and a half feet high. It was made of cast copper alloy, about three inches thick, and its brim was "wrought like the brim of a cup, like the flower of a lily." The large reservoir appeared to rest on the backs of twelve yearling calves; these animals were thought to be symbols of fecundity and power. As such they were suitable sacrificial victims (*Micab 6*). The calves were grouped in four sets of three, headed toward the major points of the compass. The arrangement perhaps signified, as Dr. ALBRIGHT has suggested, "the round of the seasons through the year."

Photo E. G. Howland



In the Winter issue of *ARCHAEOLOGY*, read about:

*The New Shaft Graves of Mycenae*, by the excavators,  
G. E. MYLONAS and JOHN PAPADEMETRIOU;  
*Recording Egypt's Ancient Documents*, by GEORGE R.  
HUGHES of Chicago House, Luxor;  
*Olynthus, the Greek Pompeii*, by its discoverer, DAVID  
M. ROBINSON;  
*Peruvian Panorama*, with photographs recently taken by  
J. ALDEN MASON;  
*The Treasures of the Shōsōin*, by BUN-EI TSUNODA,  
editor of *Palaeologia*;  
and other articles, news items and book reviews.

# ARCHAEOLOGY IN WESTERN PANAMA

By Gordon R. Willey and Charles R. McGimsey

In 1948 Dr. Gordon R. Willey served as assistant to Dr. M. W. Stirling, leader of the Smithsonian Institution-National Geographic expedition to Panama. In 1952, as Bowditch Professor of Archaeology at Harvard, he was in charge of a Peabody Museum field party in the same area. In addition to Panama, Dr. Willey has worked extensively in the archaeology of the southeastern United States and in Peru. Mr. Charles R. McGimsey, along with Mr. James N. East, accompanied Dr. Willey on the 1952 trip. Mr. McGimsey, a graduate student of anthropology at Harvard, is also a specialist in the archaeology of the southwestern United States. Both authors wish to express their appreciation to Dr. Alejandro Mendez, Director of the National Museum of Panama, who aided the Peabody Museum group throughout their stay in the republic.

THE ARCHAEOLOGY OF PANAMA ASSUMES A special significance in the prehistory of the Americas because it is almost certain that somewhere in this Isthmian linkage of two continents there will be found evidence relating the great native civilizations of Mexico and Central America with those of the Andes. This problem of cultural interconnec-

tions remains one of the outstanding mysteries of the pre-Columbian past. Immediately recognizable influences of the Mexican-Guatemalan civilization centers are traced southeastward only to central Honduras and Salvador where they seem to disappear rather abruptly. Similarly, in the south, the distinctive Peruvian cultural traditions fade and vanish toward the northern boundary of that republic. In the vast intermediate regions of Ecuador, Colombia, Panama, and lower Central America there are, of course, numerous traits which are held in common with both Middle American and Central Andean high cultures, but most of these are features of a general nature without particular meaning in the establishment of specific cross-currents of influence.

For those few elements or traits of a more complex or specialized kind there is rarely available information pertaining to their chronological positions in intermediate regions. This last is probably the most serious obstacle to a solution of problems of inter-American diffusions. For while there are reasonably adequate and detailed cultural sequences in Middle America and Peru, the intermediate stretches of territory have not yet been so fully studied. Work is, however, progressing in all of these geographically intervening countries, and in some places relative chronologies are

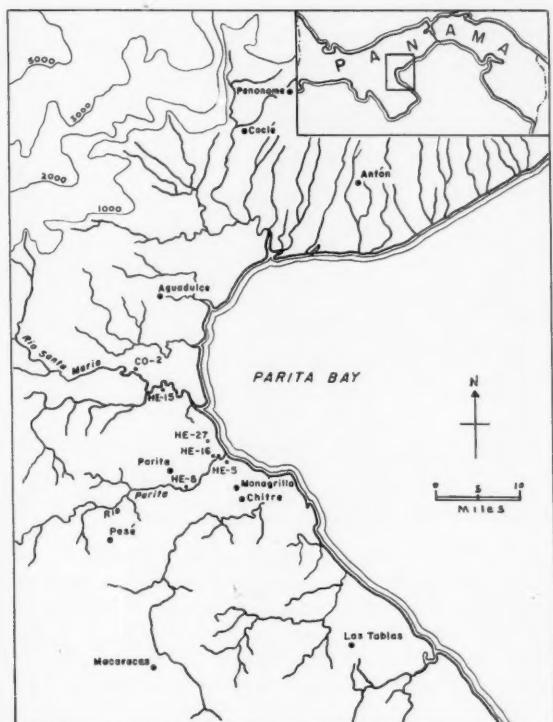


Fig. 1. Map of the Parita Bay region of western Panama. The Rio Parita and the Rio Santa Maria are two of the major streams flowing into the bay. The famous Sitio Conte is in the vicinity of the town of Penonome. Sites explored in 1952 are indicated by the survey numbers. The Monagrillo mound is designated as He-5, Sarigua as He-16, and Zapotal as He-15.



Fig. 2. The pleasant river valley of the Rio Santa Maria. This photograph shows characteristic dry season foliage and the striking contrast between the light-colored, dry grass and the green trees.

beginning to emerge. The present account treats of investigations into the question of chronology in a region of western Panama.

PANAMANIAN ARCHAEOLOGY is by no means drab, but it should be stated at the outset that the aboriginal remains in this country are not of the same order as those of Mexico-Guatemala or Peru. There are no great mounds, and if temples and palaces once existed they were built of perishable materials and have long since disappeared. But this absence of impressive above-ground architecture is deceptive as an indicator of the cultural status and accomplishments of the Indians in the area. Both archaeology and the chronicles of early Spanish travelers attest to a country of dense populations settled in small but rich kingdoms. These petty states were ruled by monarchs whose power and wealth are displayed through the elaborate burials in which not only great quantities of pottery, goldwork, and other jewelry, but also the im-

molated bodies of wives or retainers accompanied the dead chieftain.

Until very recently, the archaeology of Panama was known from such tombs and from excavations whose purpose had been the recovery and description of specimens. The writings of HOLMES and MACCURDY on the prehistoric remains of the Chiriquí Province in the northern part of the republic provide such a background. Similarly, LINNE's survey of the Caribbean and Pacific coasts of Darien was concerned primarily with such objectives. The outstanding Panamanian monograph, to date, LOTHROP's excellent treatise on Sitio Conté in Coclé Province, depicts stone and ivory carvings and gorgeous objects of gold by the hundreds. There is, also, an attempt at chronological separation of these grave materials in LOTHROP's report. This chronological breakdown is, however, by the author's own admission, reflective of a very brief span of time in Panamanian prehistory, and may be considered as marking only minor changes in what is clearly the same close-knit cultural tradition. In sum, until very recently, the archaeology of Panama was seen as a flat

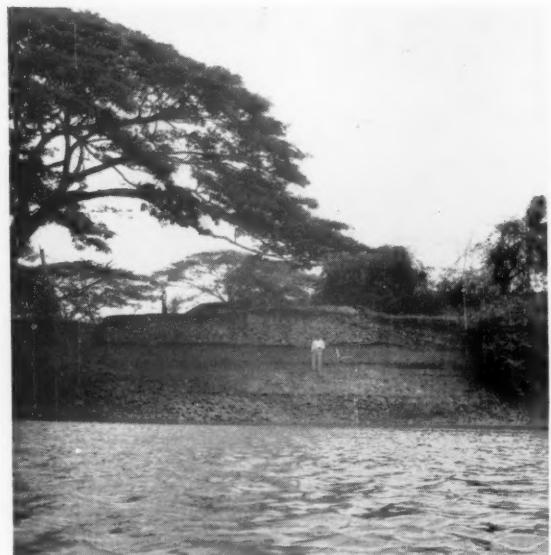


Fig. 3. Polychrome ceramics, in general similar to the Coclé style, come from refuse and burial sites such as these. This deep (two meter) refuse heap of shells and potsherds has been exposed on the north bank of the Santa Maria River at the Aristide Giron site (Co-2). Potsherds from this midden are shown in fig. 13, d, e.

and two-dimensional picture. Culture areas, such as Darien, Coclé, Veraguas, and Chiriquí were blocked out on the basis of distributional analyses, but little attention had been given to time depth within any of these areas.

That such time depth was there seemed indisputable in spite of the fact that it had not been demonstrated. A Panama lying uninhabited until the late, immediately pre-Spanish centuries was unbelievable. To investigate these problems of culture sequence and the probable earlier periods in the Isthmus was the task of field expeditions undertaken in the years 1948 and 1952. On both occasions headquarters were set up in the small town of Parita situated in the north-east corner of the

Azuero Peninsula (see map, FIGURE 1). This location is in the Pacific watershed about eighty miles south and west of the famed Sitio Conté where LOTHROP defined the Coclé culture.

In 1948 four sites were examined in the Parita district. Three of these contained burials and rubbish pottery of a polychrome class reminiscent of, but not completely equivalent to, that which LOTHROP found at Sitio Conté. Of unusual interest in that year's work was the exploration of a fourth site, a shell mound, in which we found a pottery style completely unlike that of the other three sites, of Sitio Conté, or of anything previously known in Panama. At that time it was our hunch that this site, the Monagrillo mound, was considerably earlier than any of the polychrome pottery sites although we could not prove this. The objective of the 1952 expedition was to search for clues as to the chronological relationships between what we had defined as the "Monagrillo culture" and the rather better

known Coclé-like or polychrome pottery sites.



Fig. 4. The barren, sun-baked and wind-swept alvinas are in sharp contrast to the hills and river valleys to be found a few miles inland. This photo looks out over a headland of the old coast line on which the site He-27 was located. The desolation, relieved only by stunted and scrub vegetation, is typical. A mile or so beyond this headland the present, active coast line is marked by a dark mangrove-covered ridge.

teenth century, and it is likely that many of the Parita-Coclé sites were occupied at this relatively late date.

In contrast to this fertile hill and valley setting, the nearby coastal lands of the Bay of Parita are low, sandy, and semi-desolate (FIGURE 4). Today, much of this coastal country, a strip from two to three miles wide, is unsuited for farming, and it is probable that this was also true in the past. Fishing and the collection of marine foods, now as then, are the main occupations of the small coastal population. Such a fishing community exists today near the mouth of the Parita river, not more than 400 meters distant from the remains of the village of the ancient Monagrillans (FIGURE 5).

This Monagrillo mound is located upon what appears to have been a small peninsula which once extended out into the open sea. The peninsula had been part of a former coast line which can be traced for

THE COUNTRY BETWEEN Parita and Aguadulce is pleasant, rolling hill terrain. In dry weather the dark green tropical trees contrast attractively with the light brown grass cover, and the landscape often resembles that of a casually planned park with small clusters of forest dotted here and there (FIGURE 2). Along the rivers, trees sometimes form galleries screening the stream from both sides. Among these low hills and river valleys are the principal prehistoric sites of the Coclé, or Parita-Coclé, culture (FIGURE 3). The town of Parita takes its name from a chief reputedly of great wealth and power, who defied the Spaniards in the early six-

Fig. 5. The Monagrillo shell mound, looking west over the surface of the site with the houses of the modern fishing village in the distance. Excavation dumps can be seen in the center of the picture.



miles along the bay and which lies a mile inland from the present active beach. This old coast is marked by a clearly discernible elevation varying from one to three or four meters in height, and it is separated from the new beach by a sand and mud flat, a type of wasteland known locally as an "alvina." These alvinas are wet by occasional high tides and are salt-impregnated. They seem to have been created by the building up of bay-mouth bars. These processes of coastal change, as will be seen, are reflected in the history of the Monagrillo mound.

THE SHELL MOUND at present is without vegetation except for a few stunted thorn trees and cactus plants. It rises almost two meters above the alvina flats and is 210 meters long and over 80 meters wide. Bare, sun-baked alvina lies to the north, south, and east. To the west, where the peninsula joins the old mainland, is the modern fishing village. In 1948 a dozen test pits were made in various parts of the mound but no complete cross-section of mound structure was obtained.

In 1952 two trenches were cut across the shorter, or north-south, axis of the mound. They revealed the construction which is presented in the diagram (FIGURE 6) and which can be reconstructed briefly as fol-

lows. A natural low clay peninsula (A) extended from what was then the active coast part of the way across the mouth of a small inlet. On this peninsula or spit storm action built up a deposit of sand, gravel, and large shell (B), gradually sorting it until the heavier material worked to the bottom. At this time a sandy beach (C) was being added by wave action on the north, or seaward, side of the spit and the same conditions that produced the beach also made possible the development of an offshore bar a mile to the seaward of the site. This is the bar formation referred to in the previous paragraph, and it was along this bar that the new and present coast line was formed. The bar must have left a lagoon between itself and the mainland, a body of still water that was undoubtedly an ideal environment for the shellfish. It is at about this time in the depositional history of the site that the first good indications of human occupation were laid down. These are seen as occasional lenses of shell refuse and potsherds in the sand layer (D) which overlies the beach deposits (B and C) and appears to have been accumulated on the site by winds blowing from the offshore bar and across the steadily enlarging dry borders of the lagoon. These dry borders undoubtedly grew in size as land erosion and floods from the bisecting Parita River filled the lagoon with silt.

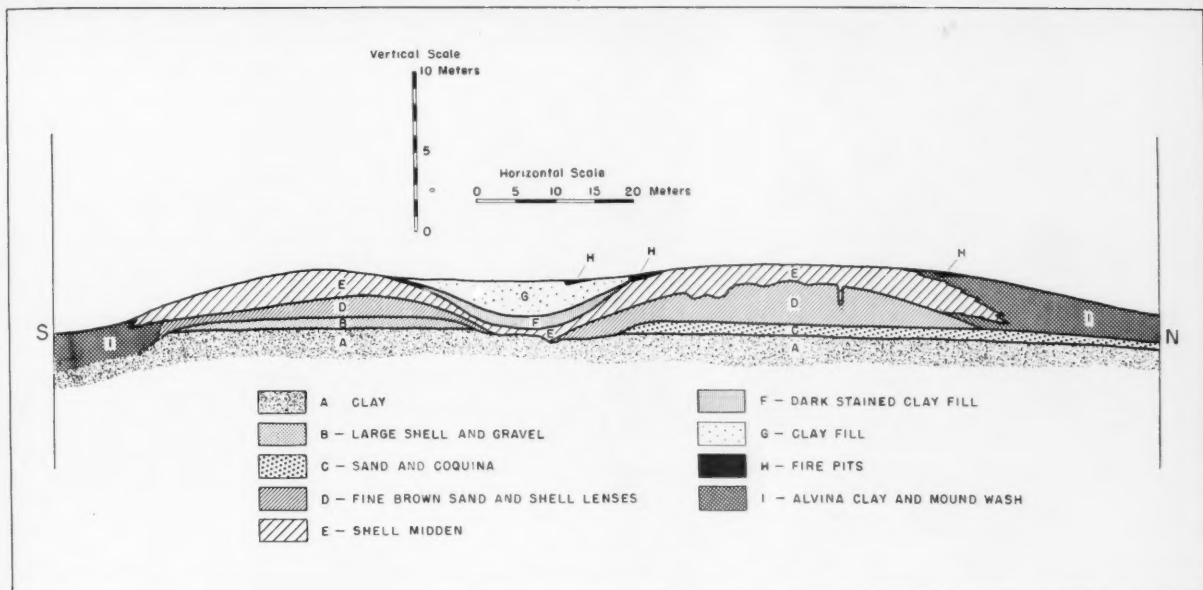
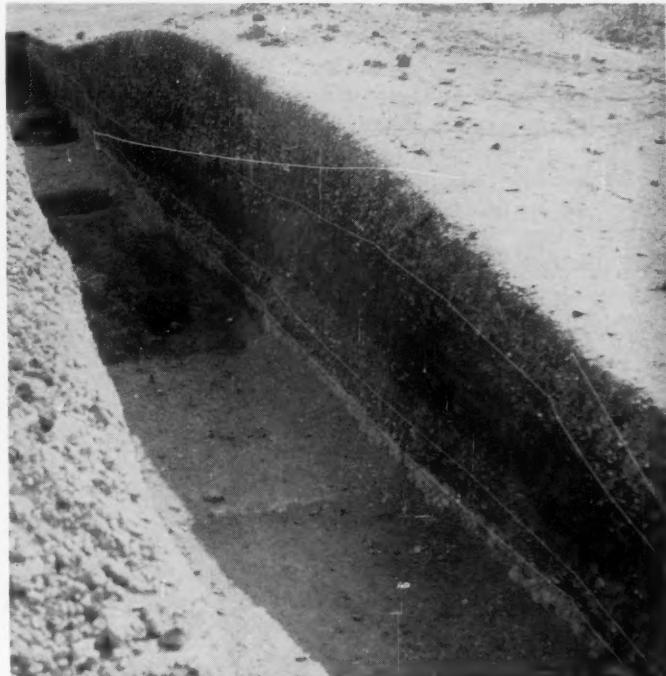


Fig. 6. Cross-section, on a north-south line, of the Monagrillo shell mound. The vertical scale has been doubled.

This brings us to a convenient point in our reconstruction to consider a site feature related both to erosion and filling. It will be noted that in the center of the mound there is a gully cutting down into basal clay. The origin of this gully or "trough" is best explained by assuming that the offshore bar and lagoon developments to which we have referred brought about changes in the drainage pattern of the adjacent shore, including the site. This erosional "trough" continued to be a feature of the surface of the mound. Stratum E was built up with the refuse of small bivalves and other shells during the period of the heaviest and most continuous occupation of the site (FIGURE 7). This stra-

Fig. 7. An exposed face of the trench cutting through the southern ridge of the Monagrillo mound. The upper shell level, marked off with string, is stratum E. Immediately underlying this is the sandy stratum D. The lower shell layer, B, lies on top of the basal clay layer, A, the light-colored band at the base of the profile.



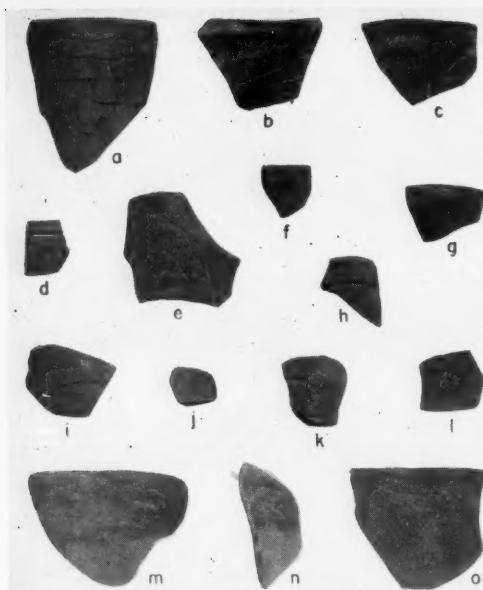


Fig. 8. Monagrillo phase potsherds: a-1, incised and punctuated types; m-o, red-banded types.

tum was deposited largely upon the two ridges on either side of the "trough." However, as the filling of the lagoon progressed the favorable conditions for shellfish gathering ceased; and the first and major occupation of the site was terminated.

With the lagoon filled, the run-off from the erosional "trough" in the center of the mound was blocked, and this, in turn, resulted in the gradual filling of this depression with soil. This was accomplished, first, by material from the middens (E) washing down from the interior sides of the two ridges. Later, dust and sand, blown in from the drying alvina, became a compact and clayey mass (F and G) clogging the old gully. Casual occupation of the site by a second group of people occurred at this time, and the pottery refuse of this second occupation is found only in strata F and G of the "trough" fill. Long after the second occupation a third people used the mound for firepits and, possibly, camps. The pits and pottery of this last group are superficial intrusions of the midden and trough fill. During the stay of these last inhabitants conditions at the site must have been very similar to what they are at present.

THIS COMPLEX STORY of the natural and human factors responsible for the growth of the Mon-

grillo mound gives us our first insight into the cultural chronology of western Panama. In strata D and E we find only the pottery of the Monagrillo culture or phase. This is an unslipped ware of simple bowl forms occasionally decorated with incised lines, punctations, or bands of crudely applied red paint (FIGURE 8). Associated with this Monagrillo pottery are heavy pebble choppers and grinding implements (FIGURE 9). These stone tools, shaped by use rather than intention, were made from triangular-formed, water-worn rocks some five or six inches in length. One of the narrow edges was used either for chopping or grinding. Crude stone basins recovered from the midden may have served as companion pieces to the grinders. Chipped stone implements are rare, a scraper being the only form recorded.

The pottery in strata F and G, that belonging to the second occupation of the site, is entirely different from

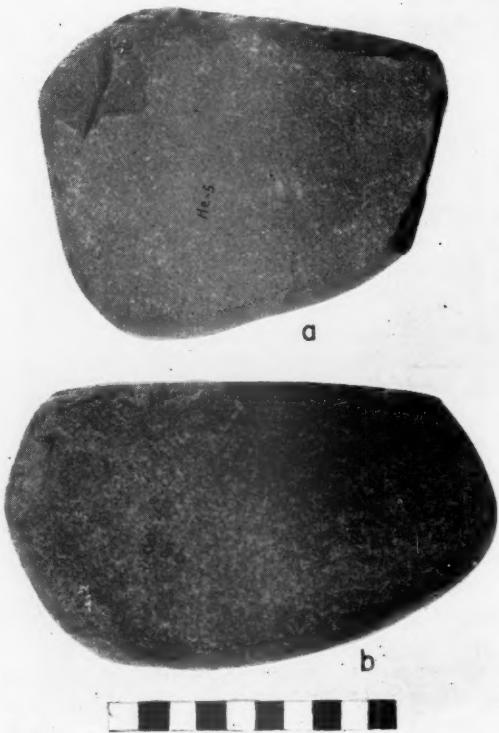
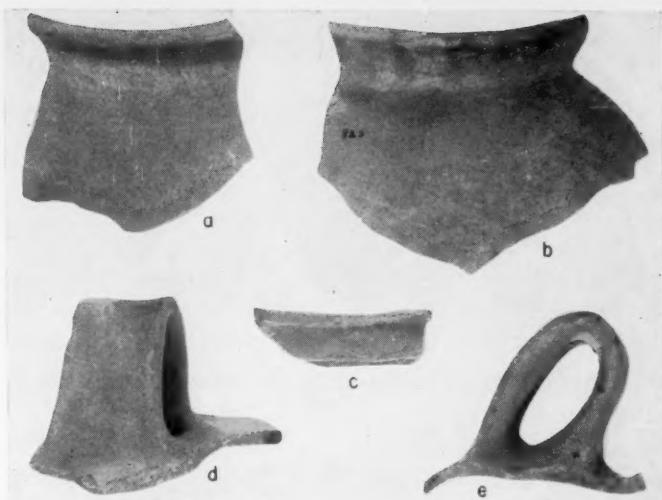


Fig. 9. Pebble tools of the Monagrillo phase: a is a chopper with the cutting edge at the top; b is a grinder, seen in profile, with the flat grinding surface at the top. (The scale is in centimeters.)

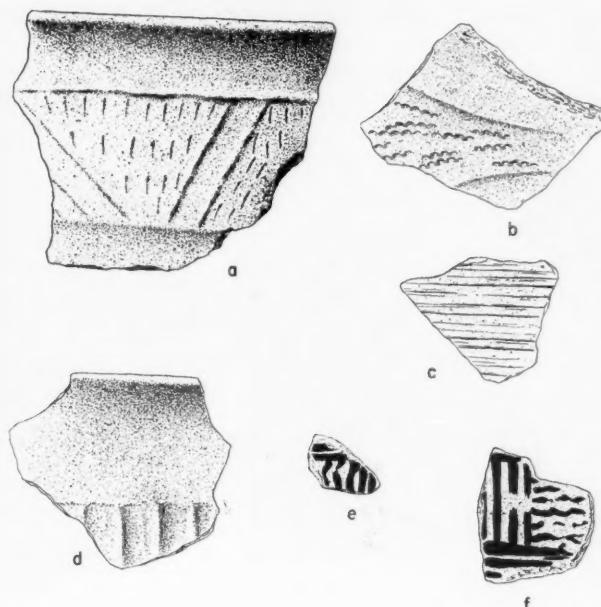
the Monagrillo ceramics. Most of this later material is a red-slipped ware of collared and handled jar shapes (FIGURE 10). Along with the red ware were found three black-on-white pottery fragments, similar to Coclé sherds (FIGURE 11, e, f). This material of the second occupation has been called the Alvina Complex, and the conditions under which it was found strongly suggest that these are the remains of a coastal campsite related to the larger polychrome pottery sites of the interior.

The third occupation of the mound, that represented by the fire pits (H), is known as the El Tigre phase. El Tigre pottery is unslipped and unpainted, and the sherds are those of large bowls or jars with rim lug rather than handle appendages (FIGURE 12). Our native Panamanian workmen suggested that these El Tigre fire pits were the remains of salt-boiling camps, this being a local custom that is still carried on along the alvinas today. This seems a reasonable explanation of the El Tigre vessels so superficially buried in the mound, but we are at a loss to assign a date to El Tigre. Although our same workmen informants stated that the El Tigre jars resembled those still in use, our investigations in

Fig. 10. Rim and handle sherds of the Alvina Complex.



rubbish piles of nearby fishermen's shacks known to have been inhabited within the last fifty years revealed a native-made pottery quite distinct from that designated as El Tigre. Furthermore, no artifacts of European manufacture or concept were found in any of the El Tigre pits. If the El Tigre occupation of the mound dates from relatively late times, and it may, it is most likely that it belongs somewhere in the Colonial centuries.



WITH THIS STRATIFICATION in the Monagrillo mound as a lead, explorations were made at a number of other locations for a distance of some twenty miles up and down the shore of Parita Bay. On the edge of the old coast line overlooking the delta flats of the Santa María River, in an environmental situation comparable to that of Monagrillo, we were fortunate in finding another shell mound similar in depth and size to the first. This site, ten miles north of Monagrillo, and known as Zapotal (see map, FIGURE 1, site He-15), disclosed Monagrillo pottery throughout a meter

Fig. 11. Sarigua and polychrome potsherds: a and b, Sarigua sherds with applique ridges and shell-stamped markings; c, Sarigua striated or combed sherd; d, Sarigua applique-ridged sherd; e and f, black-on-white fragments found with the Alvina Complex in the second occupation level at the Monagrillo site in Panama.



Fig. 12. Characteristic rim lugs of the coarse El Tigre pottery.

or more of refuse depth with a sprinkling of later painted sherds in the upper levels. These painted sherds, while not exactly like those of the Alvina Complex, stand clearly apart from Monagrillo ware and show a similarity to the Coclé polychromes. Again, the superposition of the painted wares over the Monagrillo ceramics is clear.

In subsequent excavations at other sites a new pottery complex was disclosed, one which differed radically from either Monagrillo or the Coclé-like polychromes. Material of this new kind was discovered in a small shell mound on the old coast north of the Parita delta and not more than a mile or so from the Monagrillo mound. We have called this new style Sarigua after its location (see map, FIGURE 1, site He-16), and there are reasons to believe that the Sarigua Complex may represent an interval chronologically intermediate between the Monagrillo phase and the Alvina Complex. Sarigua pottery is an unpainted, very thin, hard ware. Its qualities of paste and temper are closer to those of Monagrillo than to the painted and polychrome pottery. The principal Sarigua vessel form is a bowl with a low shoulder angle, incurved side walls, and a re-

flared rim. Decoration includes incision, punctuation, shell-edge stamping, comb-like striations, and appliquéd ridges (FIGURE 11, a-d).

Although the clues to the chronological position of Sarigua are scattered and slim, the various bits of evidence are consistent. To begin, three Sarigua sherds were found in the "trough" of the Monagrillo mound. These pieces were taken out at a point between stratum E and stratum F. In this position they underlay Alvina sherds but were above Monagrillo pottery. At a small site near He-5, a single Sarigua sherd came from well below a deposit of pottery that is equated with Alvina and other painted and polychrome styles. Test pits in another thin midden, He-27 (see map, FIGURE 1), show a comparable stratification with Sarigua underneath polychrome horizon materials. Thus, all of these data suggest that Sarigua is later to the area than Monagrillo but prior to the Coclé epoch.

**W**HAT DO THESE sequence indications in Panama imply from a general historical point of view? Although we have, as yet, been unable to relate Monagrillo as a specific style to anything in nearby or remote areas, this unique complex may throw some light upon inter-American diffusions. For example, it is known that in both Peru and Middle America the earliest pottery complexes consist of plain or simply

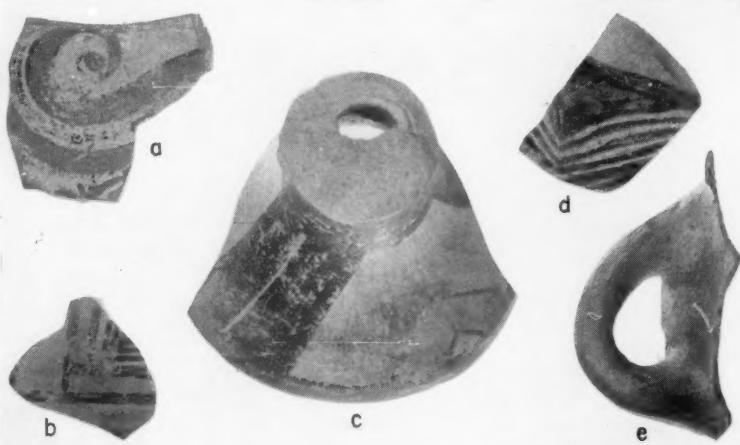


Fig. 13. Polychrome sherds from the Juan Delgado (He-8) and Aristide Giron (Co-2) sites: a, b, and c, white-slipped fragments with red, black, and purple decoration from He-8; d and e, a black-on-white and a plain handle from Co-2.

decorated incised wares. This resemblance is not one of style or the spread of particular design ideas but, rather, a similarity of technique. It may be that the same techniques have been hit upon independently in several places in the New World; but, on the other hand, it is quite possible that techniques may be diffused over much wider areas than styles. If the latter explanation be accepted for Mexican-Peruvian likenesses in early pottery technology, Monagrillo, as a demonstrably early complex, may represent a connecting link between Middle and South America.

For the time being, however, it is admitted that we have no idea as to the absolute age of the Monagrillo

phase, and, because of this, we are handicapped in making comparisons with early and better dated periods in Peru and Mexico. Similarly, the unique Sari-gua pottery complex, even if we are correct in assigning it an intermediate sequence position, floats loose in time. At the top, the polychrome pottery styles probably compose a horizon of considerable chronological depth and diversity but lasting until the entry of the Spanish (FIGURE 13). El Tigre pottery may post-date the arrival of the Spaniards and serve to show that the native pottery arts continued long after the Indian kingdoms had been swept away.

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#### DRINKING FROM THE AMPHORA

The accompanying illustration shows a satyr drinking directly from the amphora, a jar that normal human beings (with no tails and without pointed ears) habitually used to store their wine in large quantities. This scene was as much standard in the Greek humorous repertory as some of our Li'l Abner jokes. The detail is from a rhyton by The Sotades Painter, recently acquired by the Walters Art Gallery, Baltimore. Time: 450-440 B.C.—D. K. H.





# ARCHAEOLOGICAL NEWS

## Correction

Two emendations should be made to the article "Monuments of Roman Spain," which appeared in the Spring 1952 issue. The last word in the left-hand column on page 10 should read "reconstruction" instead of "construction"; the last word of the caption, below, should be similarly altered.

## Study of Asia

A program to advance American understanding of Asia has been announced by the American Council of Learned Societies. With the help of a \$250,000 grant from the Ford Foundation, the Council will prepare the way for study in American colleges and universities of hitherto neglected Oriental languages and civilizations. In addition to training linguists and other specialists, the Council will direct the production of dictionaries, textbooks and other essential tools. The materials produced during the war for the U. S. Army Intensive Language Program, which were left unfinished when the war ended, will be completed. Eventually the Council program will include more extensive English translation of important current Asian publications, summer academic institutes for Oriental studies, better facilities for American scholars abroad, and wider American research in Asian subjects.

## New Excavation Site

A millennium or two ahead of his time is ANTHONY J. DONARGO, chief engineer of the Bureau of Highways and Maintenance of the Borough of Manhattan, New York City. Mr. DONARGO's theory that portions of New York's original cobblestone paving, laid in 1836, still remained *in situ* has been regarded with skepticism by others (*New York Times*, September 19,

1952). On September 18th, in the course of excavating in South Street for setting the foundation of a new viaduct, a portion of this early pavement, composed of irregular fieldstones, was uncovered four feet below the present street level. Hastening to the scene as soon as the find was reported, Mr. DONARGO probed beneath the surface of the early roadway, finding a number of old clay pipes, bits of iridescent glass, a couple of handwrought nails, pieces of zinc and some bricks presumed to have been imported from Holland.

Obviously we need not fear that present building methods will deprive future archaeologists of interesting sites for excavation.

## Pyramid Bats

Tomb-dwelling bats found inside the pyramids in the sepulchral chambers of kings and queens of ancient Egypt have just been added to the animal collections of the Smithsonian Institution. These animals were obtained from the great pyramids of Gizeh, near Cairo and the site of ancient Memphis. They are about the size of the ordinary American brown bat. Throughout the day they remain in the darkness of the pyramids, clinging to niches in the roof and walls. After dark they fly abroad seeking insects. The animals are not abundant in the tombs, as sometimes is the case with cave-dwelling bats.

They form part of a mammal collection made for the Smithsonian by Lt. P. QUENTIN TOMICH while a member of a Navy Medical Mission to Egypt. While no previously unknown specimens are represented, many are of creatures new to the national collections. They have just been described by Dr. HENRY W. SETZER of the Smithsonian staff in a U. S. National Museum paper.

Noteworthy among the bats is a spe-

cies of Rhinopoma, or rat-tailed bat. This particular species appears to be exclusively an inhabitant of Egyptian tombs. Very similar creatures, but specifically different, are found as far south in Africa as Lake Rudolph and east to Siam.

## Symposium on Chronology

The American Anthropological Association and the Archaeological Institute of America are jointly sponsoring a symposium on Relative Chronologies in Old World Archaeology. This is to be held at the annual meeting of the American Anthropological Association at the University Museum in Philadelphia on December 30, 1952.

The stated objective of the symposium is to provide a series of interlocking chronological relationships between major archaeological areas of the Old World as based on specific archaeological evidence of contemporaneity. Since the dating systems of both Egypt and Mesopotamia are still somewhat fluid, the emphasis will be on relative rather than on absolute chronology. The aim is to provide series of linkages at different periods so that, as specific dates become fixed, whole networks of interrelated levels embracing wide areas can be firmly anchored.

The schedule provides for the presentation of papers on the archaeological sequences and chronological relationships of the following areas:

- Egypt, by HELENE J. KANTOR
- Palestine, by W. F. ALBRIGHT
- Syria, by ROBERT J. BRAIDWOOD
- North and South Mesopotamia, by ANN PERKINS
- Iranian Plateau, by DONALD E. MC COWN
- Anatolia, by HETTY GOLDMAN
- Aegean, by SAUL S. WEINBERG
- Europe, by ROBERT W. EHREICH
- China, by LAURISTON WARD

It is hoped that this program will help to coordinate the chronologies of Egypt and Mesopotamia, to link the sequences of outlying areas to those of the archaeological heartland, and to focus attention on gaps in the record which should be filled by planned research.

The organizing chairman of the symposium is ROBERT W. EHRICH, Brooklyn College, N. Y.

#### *Frescoes of the Kariel Djami*

From Istanbul, where the Byzantine Institute continues the work of uncovering and preserving mosaics and wall paintings, PAUL A. UNDERWOOD, Field Director, sends us the following report:

The field work conducted by the Byzantine Institute has up to now been almost entirely concerned with the discovery, cleaning, and preservation of mosaics in Constantinople which were known to exist in several mosques that had been important churches before the Turkish conquest in 1453. The work begun in 1932 by Mr. THOMAS WHITEMORE in the great church of Hagia Sophia was expanded in 1947 to include the cleaning and consolidation of the extensive mosaics in the Kariel Djami, formerly the monastic church of St. Savior in the Chora. Since 1950 and the death of Mr. WHITEMORE, these undertakings have been continued and expanded under the direction of Professor PAUL A. UNDERWOOD of Harvard University-Dumbarton Oaks to include the mosaics in the church of the Pammakaristos.

With the current season of 1952, after some experiments conducted in 1951, the Byzantine Institute has entered upon a new venture, this time in the field of fresco-painting, for in addition to the wealth of mosaic art in the Kariel Djami, that gem of late Byzantine churches also contains a little-known series of wall paintings which, like most of its mosaics, were executed at the beginning of the fourteenth century. They occur in a room (more than 16 meters in length by about 5 meters in width) that continues the outer narthex along the South side of the church. Sometimes called the Parecclesion (Side-church), it is probable that this room was the Trapeza, or refectory, of the monastery. All the interior surfaces, from the floor to the top of the dome that covers one of the three bays, are deco-

rated with wall-paintings in a *secco* technique. But at various times after the adaptation of the building to Moslem use these frescoes were obscured, first by various types of pigment, notably a yellow ochre casein paint applied primarily, though not solely, to the faces, hands, and feet of all figures, and subsequently by successive coats of whitewash uniformly spread over all the surfaces. In the course of time the whitewashes, especially, have sufficiently disintegrated to permit the identification of most of the scenes in the vaults and tympana above, and a number of the saints that fill the lower register on the walls beneath the cornice. In modern times, therefore, these frescoes have been only dimly discernible and have remained virtually unknown.

Last season, on a tentative basis, the process of cleaning was begun in one of the two smaller scenes in the soffit of the arch immediately in front of the apse. The result, even in its incompletely stage, was so full of promise that plans have been made to proceed as rapidly as possible with the cleaning of all frescoes in the building, but without hindrance to the work on the mosaics. At present writing two splendid fresco paintings are revealed, though neither is yet in a finished state. The scene in the right-hand side of the arch in front of the apse, begun last year, is a representation of the *Raising of the Daughter of Jairus*, and adjacent to it, in the concha of the apse itself, there has only now been uncovered a truly magnificent example of the *Anastasis*, or, as it is known in western art, *The Harrowing of Hell*.

The quality of these paintings and the condition of the entire series hold out the promise that when the cleaning is completed the effect will be worthy to accompany the famous mosaics of the Kariel Djami. It is even probable that they will more nearly approximate their original condition than do the mosaics, for there are no great areas of total loss in the frescoes whereas extensive areas of mosaic in the vaults of the two narthexes have fallen.

To execute the technical aspects of the work on the frescoes the Byzantine Institute has been fortunate in securing the able services of Mr. ERNEST J. W. HAWKINS, a member of its staff for many years, and of Mr. CARROLL WALES, well trained in the United States and experienced in similar work. In the initial stages of

cleaning the invaluable aid and advice of Mr. MURRAY PEASE, Curator of its Technical Laboratory, were generously made available by the Metropolitan Museum of New York.

#### *Egyptian Serpents*

Deadly serpents of the Egyptian desert form a considerable part of a collection of 1,100 museum specimens of reptiles and amphibians recently received by the Smithsonian Institution from Dr. R. E. KUNTZ, member of a Navy medical research unit now in North Africa. Many of the creatures included in the collection, particularly the snakes, have a place in classical and Near Eastern folklore. The poisonous ones belong to two major groups—the cobras and the sand vipers.

The term "asp" was generally applied to the cobra, a sacred animal in ancient Egypt. It formed part of the headdress of solar deities, and its form was included in the crowns of kings and queens. Toward the end of the twentieth dynasty, when it became the custom to preserve sacred animals, the cobra was embalmed at Thebes. There is a possibility that one of the cobras was the snake that bit Cleopatra, although according to Dr. DORIS M. COCHRAN, associate curator of reptiles of the United States National Museum, this may have been the horned viper, *Cerastes cornutus*.

#### *ARCHAEOLOGY Editor in Rome*

Freed from editorial labors, and on leave from the Classics department of Washington Square College, New York University, JOTHAM JOHNSON will spend the coming year in Rome, where he intends to undertake research on a Fulbright grant.

Also in Rome is LIONEL CASSON of New York University, former Business Manager of *ARCHAEOLOGY*. He will study there on a Guggenheim fellowship.

#### *New Mexico Discoveries*

Under the direction of Dr. PAUL S. MARTIN the Chicago Natural History Museum has once again conducted a successful campaign of excavation in New Mexico (for accounts of the 1950

and 1951 campaigns see Dr. MARTIN's article, "With Pick and Shovel in Pine Lawn Valley," *ARCHAEOLOGY* 5 [1952] 14-21). This year's work, concentrated on a cave dwelling of the Mogollon Indians which lies thirty-three rugged miles from Reserve, N. M. where the expedition has its headquarters, revealed evidence of a most interesting kind. Fragments of pottery and other artifacts found in the cave proved to be typical of contemporary cultures which flourished at long distances from Mogollon territory. The excavators were, therefore, able to conclude that the river valley above which the cave lies, although now desolate and almost inaccessible, was a heavily traveled inter-tribal trade route about one thousand years ago.

#### *Census of Ancient Glass*

An interesting project of international scope, started since the end of the war, is that being undertaken by the International Committee on Ancient Glass, under the chairmanship of Mr. RAY W. SMITH. At our request Mr.

SMITH has provided an outline of the history, accomplishments and future plans of the Committee.

At a meeting held in Brussels during April 1952, a program for the production of a comprehensive written work on ancient glass was launched by the International Committee on Ancient Glass, consisting initially of the following members: Mme. G. FAIDER-FEYTMANS, Dr. DONALD B. HARDEN, Dr. C. J. LAMM, Mr. RAY W. SMITH, and Mr. W. A. THORPE. The formation of the Committee reflects a widespread conviction in archaeological circles that an authoritative work on this subject is long overdue and that its accomplishment will require the collaboration of a group of scholars and specialists.

This undertaking was first envisaged in 1949, when the ARCHAEOLOGICAL INSTITUTE OF AMERICA, at the suggestion of Dr. HARDEN and Mr. SMITH, appointed a committee to investigate the need for a published work on ancient glass and, in case the need was found to exist, to investigate means of accomplishing such a project. In the summer of 1950, the Institute's committee, under the chairmanship of Mr. SMITH, called a conference in London to explore the problem. The assembled archaeologists, drawn from sev-

eral countries, recommended that a project be immediately organized under the guidance of an International Committee, which it was hoped would enjoy the approval of national archaeological bodies, but which would not be subsidiary to any such organization. As a result, the ARCHAEOLOGICAL INSTITUTE OF AMERICA suggested that a group selected from those who met in London proceed with the establishment of an International Committee, at the same time advising a number of national archaeological societies of this development with the suggestion that they join with the Institute in granting the International Committee their sponsorship. At the Brussels meeting Mr. RAY W. SMITH was elected Chairman of the Committee and Dr. DONALD B. HARDEN, Deputy Chairman and Archaeological Director.

The following five archaeological organizations have already expressed approval of the formation of the International Committee:

THE ARCHAEOLOGICAL INSTITUTE OF AMERICA, Kungl. Vitterhets Historie- och Antikvitets Akademien, Society of Antiquaries of London, Society for the Promotion of Roman Studies, Svenska Arkeologiska Samfundet.

Similar action is expected from societies

## The Society for the Promotion of Hellenic Studies (founded 1879)

## The Society for the Promotion of Roman Studies (founded 1910)

The Societies were founded to promote knowledge of the Hellenic and Roman worlds, their archaeology, art and history.

Each Society holds quarterly meetings and publishes a *Journal* containing well-illustrated contributions of great importance to research, and reviews of recent publications. They also maintain, jointly, a Library of some 25,000 books.

The annual subscription of £2 entitles Members  
to receive current issue of the *Journal of Hellenic/Roman Studies*,  
to use the Library,  
to attend all meetings of the Societies.

For particulars apply to the Secretary of the appropriate Society,

50 Bedford Square • London, W. C. 1, England

in numerous other countries. Although the granting of sponsorship does not imply financial or other specific obligations, such support is expected to facilitate the Committee's activities in various ways. Financial aid for this project will be sought from both international and national sources.

The International Committee will be expanded to include a representative from each of fifteen areas, which together encompass all countries in which ancient glass has been found or in which such objects are publicly or privately held. As soon as the International Committee is complete, an Executive Council will be established from its members in order to avoid too frequent meetings of a large international body. Each member of the International Committee will organize one or more national advisory committees to assist in the project within his region.

The International Committee will proceed in two phases: (a) census of existing ancient glass and a bibliographic search of all countries; (b) preparation of the written production. It will require a series of volumes to present adequately the artistic, historical, and technical aspects of the subject. All periods will be covered, from the origin of the art in early occidental and oriental centers through all subsequent periods preceding the revival of the industry in Western Europe around the twelfth century A.D. Arrangements are now being made for the first phase, including the drafting of a census-taker's manual, the establishment of a multi-lingual glossary, and the preparation of data cards for the statistical recording of the census.

It is anticipated that the census in each country will be taken by students or other qualified persons working on grants, and it is hoped that any person interested in one of these assignments, as well as anyone otherwise in a position to collaborate, will make his interests known to the Committee's Chairman, whose address is: RAY W. SMITH, U. S. Commissioner, Military Security Board, Koblenz, Germany.

#### Seminar in Numismatics

Owing to the success of the Seminar held during the past summer by the American Numismatic Society, a similar program will be offered next year.

This year's Seminar was attended by thirteen graduate students from eight universities. The theme was the use of numismatics as a necessary auxiliary to research in history and other broad fields of study. The program included background reading on coins, attendance at conferences conducted by specialists, preparation of papers on topics selected by the students, and actual contact with the coinages related to those topics.

For the 1953 Seminar grants-in-aid of \$500 each are again offered to students in the United States and Canada who will have completed at least one year's graduate study by June in Classics, Archaeology, History, Economics, Art, or other humanistic fields. Applications will also be accepted from students on the post-graduate level who hold college instructorships in any of these fields. Applications must be filed by March 1, 1953. Further information may be obtained from the office of the Society, Broadway between 155th and 156th Streets, New York 32, N. Y.

#### New Editor of *SEG*

We are informed that the editorship of the *Supplementum Epigraphicum Graecum*, left vacant by the death of Professor HONDIUS, has been assumed by Mr. A. G. WOODHEAD of Corpus Christi College, Cambridge. Mr. WOODHEAD hopes to present regularly the newly published Greek inscriptions, and his work will be greatly facilitated if all who publish such inscriptions will cooperate with him.

#### New Committee

At one of the sessions of Section H (Anthropology) of the American Association for the Advancement of Science at Philadelphia last December, attention was called to the fact that American scholars who are interested in the archaeology of the Old World belong to many diverse groups—classical ar-

chaeologists, anthropologists, Egyptologists, Near Eastern archaeologists, and others who approach the subject from a background of history, linguistics or fine arts. These groups for the most part have little contact with one another and work to a large extent in watertight compartments.

It was the consensus of the meeting that some simple and inexpensive organization might be formed to bring these people more in touch with one another and enable them to share information of value to them all. Some suggested activities were the preparation of a list or directory of the persons interested and the publication of annual bibliographies (selected and annotated) and annual reports of archaeological field work in all parts of Europe, Africa, Asia and Oceania and for all periods. Informal preliminary talks with many archaeologists later confirmed the impression that such an organization would be welcomed.

For further exploration of this possibility, a committee has been formed, consisting of members appointed by five different organizations, as follows:

JOTHAM JOHNSON (ARCHAEOLOGICAL INSTITUTE OF AMERICA)

BRUCE HOWE (American School of Prehistoric Research)

RICHARD K. BEARDSLEY (Section H of American Association for the Advancement of Science)

ROBERT J. BRAIDWOOD (American Schools of Oriental Research)

LAURISTON WARD (American Anthropological Association), Chairman

The first meeting of this committee was held early in July 1952, and a statement of proposed plans will probably be mailed at a later date to a large list of persons who might be interested. The committee will welcome suggestions, which may be addressed to LAURISTON WARD, Peabody Museum, Harvard University, Cambridge 38, Massachusetts, or to any other member of the committee.

ARCHAEOLOGICAL INSTITUTE OF AMERICA · FIFTY-FOURTH ANNUAL MEETING  
CLEVELAND, OHIO · DECEMBER TWENTY-EIGHTH TO THIRTIETH

## BRIEF NOTICES OF RECENT BOOKS

Apes and Ape Lore in the Middle Ages and the Renaissance, by H. W. JANSON. 384 pages, 148 figures (incl. 56 plates). The Warburg Institute, London 1952 (Studies of the Warburg Institute, Volume 20) £3.30.

The scope of JANSON's exegetic learning is impressive, applied to a wealth of new and old material with gusto and control that will be at once the envy and despair of many readers. Despite its range and erudite references, it should fascinate the educated layman as well as iconologists and zoophilologists, for the author's style is easy and fluent, and at no point is the sense obscure. Specialists will find it accurate except for one or two minor references. In part clarity is achieved by repetition of material, but in each case a new approach is made to the subject so that the reader is at once looking forward to new meanings and backward to previous explanations. The eleven chapters (I. *Figura Diaboli*: The Ape in Early Christianity, II. The Ape as Sinner, III. *Similitudo Hominis*: The Ape in Medieval Science, IV. The Ape and the Fall of Man, V. The Fettered Ape, VI. The Ape in Gothic Marginal Art, VII. Apes, Folly, and *Vanitas*, VIII. Apes, the Senses, and the Humours, IX. The Sexuality of Apes, X. *Ars Simia Naturae*, XI. The Coming of the Anthropoids) deal in general with the origin and transmission of ape symbolism from Karnak to KAFKA, from simiolatry to *simia naturae*; JANSON discusses fully the moments of change, the initiators of changes, and, in passing, the transmitters of the images, reviewing and developing McDERMOTT's work in the classical field (with some corrections) as a basis for then moving on through the Mediaeval and Renaissance material, with numerous comments on evidence drawn from even later periods. In consequence the character of the great periods with which JANSON deals are redrawn for us, but in novel terms. Scarcely a "great name" goes unmentioned; some, including such as Aristotle and Galen, Bernardus Silvestris, Alexander Neckam, St. Hildegard of

Bingen, Albertus Magnus, Boccaccio, Dr. TULP, Dr. ROBERT FLUDD and EDWARD TYSON (and even two elusive unknowns—*Experimentator* and "Theodontius") are reconfirmed in their greatness or achieve greater historical stature through the author's estimates of their contribution to the problem at hand.

In a like fashion appear great artists and great works of art throughout, some reinterpreted; most noteworthy are a proposed reinterpretation of TITIAN's *Laocoön Caricature* (reprinted as an appendix here from an article by JANSON in a recent issue of *The Art Bulletin*); a lucid survey of the JULIUS II tomb-problem and the meaning of the "slaves" (pages 295 ff.); passages concerning Boccaccio (pages 290-295); Chapter VIII on the Humours, *et al.*; and a convincing explanation of JOHN DONNE's much-maligned allegory, *The Progresse of the Soule* (pages 272 ff.).

The paraphernalia of the book are fine. Reading is simplified by placing the valuable notes and good illustrative plates at the end of each chapter, and an exhaustive and accurate index at the conclusion of all—an indispensable feature because of the complexity and richness of reference throughout.

JANSON's hermeneutics are so sound that anyone inclined may investigate further along the courses he indicates. In particular it appears possible that some value might come from a study of the development of simian lore in early Egypt; and certainly, in later history, further study of the development of "the struggle between ancient authority and modern critical reason" (to quote the author's final words) culminating in the eighteenth century, should produce palatable and nourishing quantities of cultural history when approached simiologically. JANSON himself placed such material outside the scope of his present work.

The flights of investigation on which one accompanies JANSON in this work are occasionally roundabout, but always exciting. The situation of the reader is similar to that of a passenger in an airplane: he is not always sure

where he is at any given moment, but on coming down finds himself precisely at his destination—and he has had an exhilarating trip.

CHARLES PARKHURST  
Oberlin College

Constantinople. *Recueil d'études d'archéologie et d'histoire*, by JEAN EBERSOLT, with a preface by A. GRABAR. 295 pages, 2 plates, 34 figures. Adrien-Maison-neuve, Paris 1951.

ANDRÉ GRABAR has here brought together a series of studies by the Byzantinist, JEAN EBERSOLT (1879-1933), which appeared in various journals and now rare booklets. The major study in the collection, which recalls his earlier books *Les Églises de Constantinople* (1913), written in collaboration with A. THIERS, and *Les Arts somptuaires de Byzance* (1923), deals with the sanctuaries of Byzantium. The first part deals with the ancient sanctuaries, giving an exhaustive survey of the origin and history of the holy relics of the treasures of Hagia Sophia, Hagia Irene, the Church of the Holy Apostles, and the Great Palace, as well as those in the numerous minor churches which studded the mediaeval city of Constantinople. After a fully documented study of the relics of Christ, the Virgin, and the saints and martyrs of the Eastern Church, EBERSOLT turns in the second part of his work to the question of the dispersion of the treasures of the sanctuaries. This theme, which he dealt with in part in his *Orient et Occident* (1928), is here pursued in terms of the diffusion of relics before, during, and after the looting of Constantinople by the Latin Crusaders in 1204.

There follows a miscellany of three studies. The longest of the three considers the public and private life of the Byzantine court with particular emphasis on ceremonial activity. The second reports several unpublished or poorly known medals, amulets, seals, and a pectoral cross in the Istanbul Museum, while the third touches briefly upon some architectural ornament in Istanbul. There is added a brief note on some unpublished Christian reliefs, also

in the Istanbul Museum. Though varied in content, this collection of studies should be of interest to all concerned with Byzantine art and history, and the relations between Byzantium and the West.

HOMER L. THOMAS

University of Missouri

New Kingdom Art in Ancient Egypt during the Eighteenth Dynasty, 1590 to 1315 B.C., by CYRIL ALDRED, vi, 98 pages, 174 plates. Alec Tiranti, London 1951 15s.

Tutankhamun's Treasure, by PENELOPE FOX, x, 40 pages, 72 plates, 2 figures. Oxford University Press, New York 1952 \$6.00

Until very recent times the reader who wished a knowledge of Egypt and its works of art found very few publications suited to his needs. Information touching this ancient civilization was very largely contained within reports of separate excavations, or studies too technical for the understanding of the non-specialist. Meanwhile literature that was directed to the layman tended to address him repetitiously with the

simplest outlines of the material, to emphasize "daily life," or the more sensational "mystery" aspects of Egyptian belief and art. Some museum publications were helpful, but were necessarily concerned primarily with the objects in their collections.

In recent years various publications have appeared that have gradually been filling this need. E. BALDWIN SMITH's *Egyptian Architecture* may be counted among them, and on a larger scale and more specialized level, W. S. SMITH's *Egyptian Sculpture and Painting of the Old Kingdom*. In England I. E. S. EDWARDS' *The Pyramids of Egypt*, and H. FRANKFORT's *Before Philosophy* both appeared in Pelican editions, at a cost that makes them available to everyone. To these the two volumes under discussion may now be added.

The volume by CYRIL ALDRED is the last of three treating the major phases of Egyptian art, and is devoted to the seventeenth and eighteenth dynasties. The great quantity of material surviving from this long moment of Egypt's empire has been organized into two sections: a general discussion of the artistic developments within the time,

and a catalogue that provides more detailed information concerning each of the 174 works reproduced in the plates. The catalogue is especially useful in documenting the changes in style through the period. A specific type is chosen (as, for instance, the portrait of the kneeling ruler, nos. 20 and 51), its ancestry stated, and a comparison suggested between earlier and later treatments of it. In both this and the book by PENELOPE FOX detailed items of information are given that are essential to understanding the objects, the nine bows beneath the feet of the ruler, the two crowns and regional symbols, the New Year's celebration, the gold collars of honor, and so on. Miss Fox has included a page reproducing the names of rulers and queens in their cartouches, and six of the meaningful symbols that are interwoven through scenes and ornament.

PENELOPE FOX, being concerned with Tutankhamun's treasure, also treats the New Kingdom, though a more restricted interval of it. The account of the discovery and contents of the tomb will always stand as one of the great stories of Egyptology. The

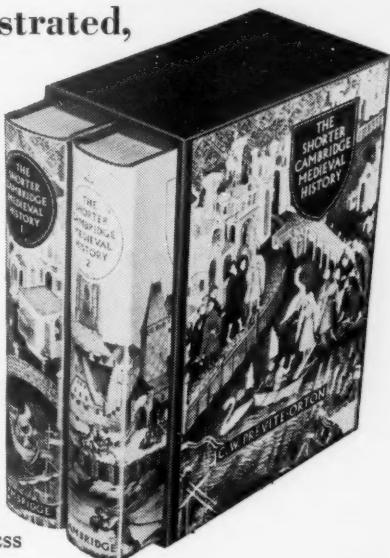
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JANE COSTELLO

*New York University*

**Dead Cities and Forgotten Tribes**, by GORDON COOPER. 160 pages, 27 illustrations. Philosophical Library, New York 1952 \$4.75.

In this attractively designed volume Mr. COOPER presents brief accounts of ancient ruins which he has visited and of little-known tribes in various parts of the world. Dividing his book into four parts: (1) Europe and North America, (2) Central and South America, (3) Africa and the South Seas, (4) Middle East and Asia, he offers in each of these sections two, three, or four chapters superficially treating various unconnected subjects. It is difficult to imagine whom this book will serve. Professional archaeologists and anthropologists will hardly be excited by the scraps of knowledge which are offered, while on the other hand, the amateur will be most meagerly informed after reading four to eight pages on "Colonies of the Vikings," "Last of the Aztecs," "Lost City of the Sahara," or "A Mystery of the South Seas," to choose a few chapter headings at random. The longest chapter, on "The Dead Cities of Ceylon," is twelve and a half pages.

The fact that Mr. COOPER has visited the places of which he speaks lends a certain quality of veracity to his brief accounts, but his enthusiasm is not sufficient to imbue these pages with real

life, despite the interest inherent in many of the subjects. There simply is not enough reading matter in the book. The photographs, in general, are excellent and most are well chosen.

For those wishing to explore untried ways, Mr. COOPER is a dubious guide. In telling about the "Last of the Aztecs," he recounts the experience of an explorer whose "attempt to take a photograph of a tribesman nearly brought about his death." Concludes Mr. COOPER: "Here then seems to be an interesting field of exploration for some courageous traveller." —G. D. W.

**Elements of Social Organization**, by RAYMOND FIRTH. xi, 257 pages, ill. Philosophical Library, New York 1951 \$5.75

Professor FIRTH's essays are an attempt to provide a systematic categorization of concepts useful to anthropologists in their analyses of human societies. After devoting a first chapter to definitions of some of these concepts, FIRTH proceeds to discuss social "Structure and Organization in a Small Community," "Social Change in Peasant Communities," and the social framework of economic organization, art, moral standards, and religion.

For specialist and non-specialist alike, Professor FIRTH is most satisfactory when he is describing and interpreting concrete social situations among the Tikopia, Maori, and Malays. The book is full of excellent examples of the author's special ability to make human behavior plausible in spite of what most Europeans and Americans are unfamiliar circumstances. It is in his chapters on economic organization and on the problems of peasant communities articulating with an industrial civilization that FIRTH best illustrates the kind of insight which can be derived from the three cardinal operational principles of anthropological studies: intensive observation of small groups, constant concern with the relations of each item of behavior to others in the same system, and the postponement of final interpretation until comparisons with other communities have been made (pages 17f.).

The volume can also be commended, especially to readers of this journal, for its good summary statement of MALI-

NOWSKI's functional approach to art, morals, and religion. These three components of culture are believed to provide mechanisms by which the members of a society strive to insure its continued operation; the forms of art, morals, and religion can therefore be understood only in the context of the social framework in which they occur.

Professor FIRTH is less successful in his attempt to provide ". . . a conceptual apparatus for the study of social process" (page 5). He distinguishes the structural, functional, and organizational aspects of social relations: ". . . by the structural aspect of social relations we mean the principles on which their form depends; by the functional aspect we mean the way in which they serve given ends; by the organizational aspect we mean the directional activity which maintains their forms and serves their ends" (page 28).

Apart from the confusion likely to be created by introducing a new definition of "social organization" (a term commonly used in anthropology), the scheme of analysis can be criticized for never making clear the frame of reference upon which it is based. Structural analyses as they have been carried out by various British anthropologists are highly abstract statements of relations usually several steps removed from the descriptions of actual behavior. Moreover, they are always made from the standpoint of an investigator who looks from the outside at the operations of social groupings in the society. Is the functional aspect of social relations to be described on the same abstract level and from the same point of view? By whom are the ends defined? Are they those ends by which the members of a society are consciously motivated to act, or are they the ends deduced by outsiders from their observations of the ramifying results of the actions? An examination of the interrelations between conscious motivations and unplanned effects is a major task of students of social process, and will never be accomplished unless the two phenomena are analytically separated more satisfactorily than they are either in FIRTH's theoretical scheme or in his examples.

Despite limitations of the kind referred to in the foregoing comments, there is enough that is sound and in-

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teresting in this book for it to be worth the attention of readers of ARCHAEOLOGY.

ERNESTINE FRIEDL

Queens College

Prehistoric Migrations in Europe, by V. GORDON CHILDE. 249 pages, 183 figures. Serie A: Forelesninger XX. Instituttet for Sammenlignende Kulturforskning, Oslo 1950

This volume consists of the lectures which V. GORDON CHILDE delivered before the Instituttet for Sammenlignende Kulturforskning in the autumn of 1946. They set the prehistoric background for the migrations of late antiquity and the early Middle Ages, which have been dealt with in a series of Institute lectures by M. ROSTOVZEFF and H. P. L'ORANGE before the Second World War and by A. BOETHIUS, E. DYGGVE, H. SHETELIG, A.

ALFOLDI, and A. GRABAR since the War.

These lectures, which cover the prehistoric migrations in Europe from Upper Palaeolithic times to the beginnings of the La Tène period, begin with a discussion of archaeological postulates concerning race and culture, chronological assumptions, and the mechanisms of cultural change. Beginning in Lecture II with the cultures of the Upper Palaeolithic and Mesolithic, CHILDE's emphasis, as he states in the preface, is upon migrations and foreign relations of cultures rather than upon their character and development. After a discussion of the adaptation of the Azilian, Tardenoisian, and Forest cultures to the post-glacial environment of Europe, he devotes three lectures to the diffusion of Neolithic culture from the Near East to Europe. One is concerned with the spread of a "Neolithic economy created in and adapted to a Near

Eastern environment" to peninsular Greece and the Balkans, another with the movement of Neolithic and Megalithic elements with maritime colonists through the Mediterranean Basin to Italy and Spain, and the third with the expansion of Neolithic and Megalithic elements through Western Europe and the diffusion of Danubian and Painted Ware cultures to southeastern and Central Europe.

In his sixth lecture, CHILDE broadly characterizes the regrouping of Late Neolithic cultures along the Danube Valley, discusses the First Neolithic of Northern Europe, and describes the spread of the Horgen, Bell Beaker, and Globe Amphorae cultures, all in preparation for a consideration of the relation of the Battle Axe cultures to the Indo-Europeans in his seventh lecture. Although in the last edition of his *The Dawn of European Civilization* he associated the ancestors of the Celts, the

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Teutons, Italici, Illyrians, and Slavs with the so-called Battle Axe cultures, here he is doubtful and turns to the steppes of Central Asia for the original home of the Aryans.

After consideration in Lecture VIII of the Early Bronze Age in terms of the rise of Minoan civilization and the Middle Helladic culture, and the spread of bronze through the Mediterranean and Atlantic Europe and among the peasant and tumulus cultures of Central Europe, he returns in his ninth lecture to the Indo-European problem. First CHILDE argues that the economic revolution of the Late Bronze Age in Central Europe, which was based upon deep mining, sheet metal work, and the reorganization of commerce, was inspired from the Mycenaean world in the latter half of the second millennium B.C., not from the Etruscan states as claimed by HENCKEN and others, who place the whole of the Late Bronze in the first millennium B.C. After rejecting the extra short chronology for Late Bronze and Early Iron Age times, CHILDE proposes that the Urnfield cultures may have been brought by small

pastoral groups with new horse chariots and cut-and-thrust swords, who imposed their languages and burial customs upon the peasants of Central Europe. Coming from some unknown starting point they would, according to CHILDE, have pushed through Hittite Anatolia and Mycenaean Greece to Central Europe. Notwithstanding the obstacles of Hittite and Mycenaean power and the lack of evidence in Near Eastern Texts, he believes this to be a possible, if not the most satisfactory, solution for the Indo-European problem.

In the last lecture, CHILDE shows how the economic revolution of the Late Bronze Age brought the expansion of the Urnfield cultures, tentatively identifying them with the Celts, Italici, Illyrians, Slavs, and Teutons. While the Urnfield cultures were spreading through Europe, the Hallstatt cultures arose between the Alps and the Oder out of commercial contacts with Italy and were spread by mounted Knights known from inhumation burials and their long bronze or iron swords. A parallel group of horsemen in Hungary and the Ukraine would have created

the Thrako-Cimmerian culture. While CHILDE admits that the whole idea of a nomadic steppe invasion of Central and Southeast Europe at the beginning of Hallstatt times is speculative, he feels that such a pre-Scythic movement would offer the best explanation of the advent of horsemen in Europe and explain the similarities of horse trappings from Hallstatt, the Trans-Caucasus, and Iran. A brief discussion of the rise of the La Tène culture out of Etruscan and Greek influences serves to bring to a conclusion these excellent lectures on the prehistoric migrations in Europe.

This work provides a broad and up-to-date survey of the major concepts behind the study of European prehistory. It points up new ways of approaching the difficult problems of chronology and the migration of peoples and cultures during the Neolithic, Bronze, and Iron Ages. With its numerous illustrations, new maps, and excellent documentation, this book will be of use to all interested in European prehistory.

H. L. THOMAS

*University of Missouri*

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ANDERSON, M. S. *Geography of Living Things.* x, 202 pages, 5 figures. Philosophical Library, New York 1952 \$2.75

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BRODRICK, ALAN HOUGHTON. *The Tree of Human History.* 253 pages, 5 maps. Philosophical Library, New York 1952 \$4.75

DOERING, HEINRICH U. *The Art of Ancient Peru.* 56 pages, 4 color plates, 240 plates, 6 figures, 1 map. Frederick A. Praeger, New York 1952 \$12.50

FASOLO, FURIO, and GIORGIO GULLINI. *Il Santuario della Fortuna Primigenia a Palestrina.* 2 volumes. About 400 pages, 50 plates, 350 figures. Rome 1952 L18,000

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KTISTOPOULOS, C. D. *Recherches sur les mots minoens.* 21 pages (mimeographed), 4 tables. Athens 1952

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NEUTSCH, BERNHARD. *Studien zur vortanagräisch-attischen Koroplastik.* viii, 75 pages, 32 plates. De Gruyter, Berlin 1952 (Jahrbuch des Deutschen Archäologischen Instituts, Ergänzungsheft 17)

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ROSTOVZEFF, M. I., A. R. BELLINGER, F. E. BROWN, and C. B. WELLES, editors. *The Excavations at Dura-Europos. Preliminary Report of the Ninth Season of Work, 1935-36. Part 3: The Palace of the Dux Ripae and the Dolicheneum.* 134 pages, illustrations. Yale University Press, New Haven 1952 \$5.00

SEDER, THEODORE A. *Old World Overtones in the New World. Some parallels with North American Indian Musical Instruments.* 66 pages, 56 figures. University Museum, Philadelphia 1952 (University Museum Bulletin, Volume 16, No. 4)

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